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THE "SKY-SCRAPER" UP TO DATE.

IT is strange that the solution of a building problem so new as that presented by the steel-framed tall building should have apparently so largely ceased to be experimental. The American architect is a good deal fonder than his co-worker in other countries of proving all things; he is by no means so much inclined to hold fast that which is good. On the contrary, he is still altogether too much disposed rather to vindicate his own "originality" than to essay the task, at once more modest and more difficult of "shining with new gracefulness through old forms." Of course his originality will be less crude, and more truly original, in proportion to his education, meaning both his knowledge and his discipline. Nothing can be more depressing than the undertaking to do "something new" by a man who is unaware what has already been done, or who has not learned how it is done. When, within a quarter of a century, the practicable height of commercial buildings has been raised, by successive movements and successive inventions, from five stories to twenty-five, we should expect, given the preference for originality that is born in the American architect, and the absolute necessity for originality that has been thrust upon him by these new mechanical devices, some very wild work, indeed, much wilder than we have had. What nobody could have expected, when the elevator came in to double the practicable height of commercial buildings, and even less when the steel-framed construction came in again to double the height made practicable by the elevator alone, is what has actually happened, and that is a consensus upon a new architectural type. The general treatment of the "sky-scraper" is already conventional, in the sense of being agreed upon. It is nearly as distinct an architectural type as the Greek temple or the Gothic cathedral. The fury of experimentation seems already to have subsided, and the designers to be all working upon recognized lines and executing variations within understood limits. All this is the work of twenty-five years, since the vertical extension made possible by the elevator began to be recognized in building. Nay, it is really the work of ten, since

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the steel-frame came in to supplement the elevator. The elevator doubled the height of office buildings, and the steel-frame doubled it again, and yet there is less of eccentricity and freakishness; more of conformity and homogeneousness, among the twenty-story buildings than there used to be among the five-story buildings.

The first business buildings in which the possibilities of the elevator were recognized were the Tribune Building and the Western Union Building in New York, which were concurrently under construction twenty-five years ago. They were much more conspicuous and comment-provoking than even the St. Paul and the Park Row now are, because they were alone and because lower New York then had a skyline, from which they alone, excepting the church spires, were raised and detached. The skyline was "the purple line of humbler roofs," built to the limit as that limit was set by the power of ascension of the unassisted human leg. Through this line of five stories the new monsters protruded in a portentous fashion, and though really they were but of half as many stories again as the older edifices that formed the skyline, they were more distinctive features than the successors which are four and even five times as high as the old-fashioned edifices. Now, New York has no skyline at all. It is all interruptions, of various heights and shapes and sizes, not even peaks in a mountain range, but scattered or huddled towers which have nothing to do with each other or with what is below. A clever British observer says with truth that New York from either river is "hideous and magnificent," for that it "cries aloud of savage and unregulated energy."

It is true that the first two elevator buildings had visible roofs, the one a lofty mansard with three-story dormers, the other a steep wedge, and that they were, therefore, taller than some of their successors which contained more stories, as well as more shapely. But they were in reality timid beginnings. It came soon to be seen that, even with walls of actual masonry, it was profitable to build full twice as many stories with the elevator as had been practicable without it. Ten or twelve stories became the limit. When the height varied from seven stories to twelve was our period of experimentation in commercial building. There was a great deal of wild work, and some interesting work, but there was no entirely successful work. There was no "convention." Designers were not agreed with each other, and a designer often appeared to be at odds with himself, upon the very data of his artistic problem. They divided their fronts and grouped their stories capriciously and eccentrically. In the face of the new requirements they ignored that primary truths of design were as applicable to ten stories as to three. They would have saved themselves and the people who had to look at their work a grievous trouble by merely reverting to Aristotle and bearing in

mind the precept of the father of criticism, that a work of art must have a beginning, a middle and an end.

The architect who first impressed upon his contemporaries and the public that this precept was applicable to high buildings was a public benefactor. It was from his inculcation of a forgotten truth that the consensus in the design of tall buildings began, of which we everywhere see the results. Confusion became order in his path. I do not undertake to say who it was who first designed a tall front in conformity with this ancient truth, and sharpened Aristotle's wise saw with a modern instance. But I should say that the designer who enforced it most powerfully was the architect of the Union Trust Company's Building on Broadway. He had come from making, in the north front of the Times Building, a success which was only partial by reason of the indistinctness and confusion of the primary divisions, when he perceived, from a contemplation of the executed work, what was the matter with it, and proceeded, in the design of the Union Trust, to remedy those defects. There is here no confusion about the principal features of the composition nor any doubt about their forming an architectural countenance. The basement is distinctly set off from the superstructure, and this in turn from the crowning feature, the roof and its appendages, and the intermediate stories are plainly intermediate and connecting. The force of the arrangement is independent of the style, a more or less Richardsonian Romanesque, independent of the detail, though this is studied and successful, independent even of the features adopted to carry it out. It does not essentially matter whether the central and chief division be formed by openings running through it, as in the Union Trust, or by rows of small and similar openings, which leave the shaft to assert itself as nearly as may be as an equal and monotonous surface. The essential point is that there should be a triple division, and that the three parts should both assert themselves as parts and combine into a whole.

This is the agreement, the convention, which so many designers of sky-scrapers have adopted that whatever sky-scraper does not conform to it becomes what a contributor of yours is in the habit of calling an "aberration." Let it be noted, however, that aberration is not necessarily a term of reproach. It is, according to the dictionary, "a deviation from the customary structure or type." Such a departure may or may not be justified by its result. If there is less reason in it than in the customary structure, if the deviation seems to come from mere caprice, then the designer has failed to justify it. If, and in so far as it is more reasonable, more expressive, more beautiful, then the designer has justified it and is to be congratulated. Our latest architecture contains in its sky-scrapers, examples of both kinds. But let us first consider the more noteworthy

of recent tall buildings which conform to the convention. In these the connection is more specific than that of a mere triple division. It is founded upon the analogy of a column, with its division into base, shaft and capital, and even conforms, as far as may be, to the proportions of the classic column. That is to say, the shaft, the middle division, is much taller and very much plainer than the base or the capital. The plainness of it is as essential to the analogy as the excess. The nearer it comes to being a quite monotonous mass the more value have the variations and ornaments of the base and the capital to which its plainness is a relief and a foil. It may doubtless be subdivided, so as to be an organic whole within a larger whole. But this subdivision is difficult to manage, for several reasons.

While the inheritance of three thousand years may be taken as a warrant for the primary triple division, which thus passes without challenging inquiry, a subsequent subdivision needs an explanation. To be "rhythmical," this subdivision must itself be triple, and to triply subdivide a member of a triple composition, without thereby confusing the primary division and thus the unity of the work is a difficult feat, of which the success has not been worth the trouble in any example of the tall building known to me. It is, of course, possible to introduce at the bottom and at the top of the shaft a story recalling the transition, in the actual column, to the base and to the capital. This has been done in the Union Trust with success. But the bonding of the shaft itself is recognized in the column as a modern and corrupt interference with classic purity. In the Empire Building, this bonding has been attempted by means of stories intercalated at equal distances, framed in emphatic mouldings, and treated with some separateness, in what we may still call the shaft. The principal front of the Empire, the side, is, however, so fortunate in its extent, that its altitude is no longer the principal dimension, and that the analogy of the column is not directly recalled. But even here it seems that the decorative top and the decorative base would be more effective, and the composition clearer, if the central mass had been treated with absolute uniformity. The most that can be said for the intercalated stories is that they do not much interfere with the monotony of the central mass. But they interfere enough, it seems to me, to indicate that the architect did not appreciate the high architectural value of the monotony, in conjunction with the more ornamental parts. Any difference in the treatment of the several stories not only is, but must appear, arbitrary and capricious. By this device, one story is made to differ from another story in importance, whereas it is not only true, but it is known to every believer that above the ground floor, or the ground floor and the first floor, the stories are all alike. In the Washington Life, it is true, it is the third story which is the quarters of the corporation that is the



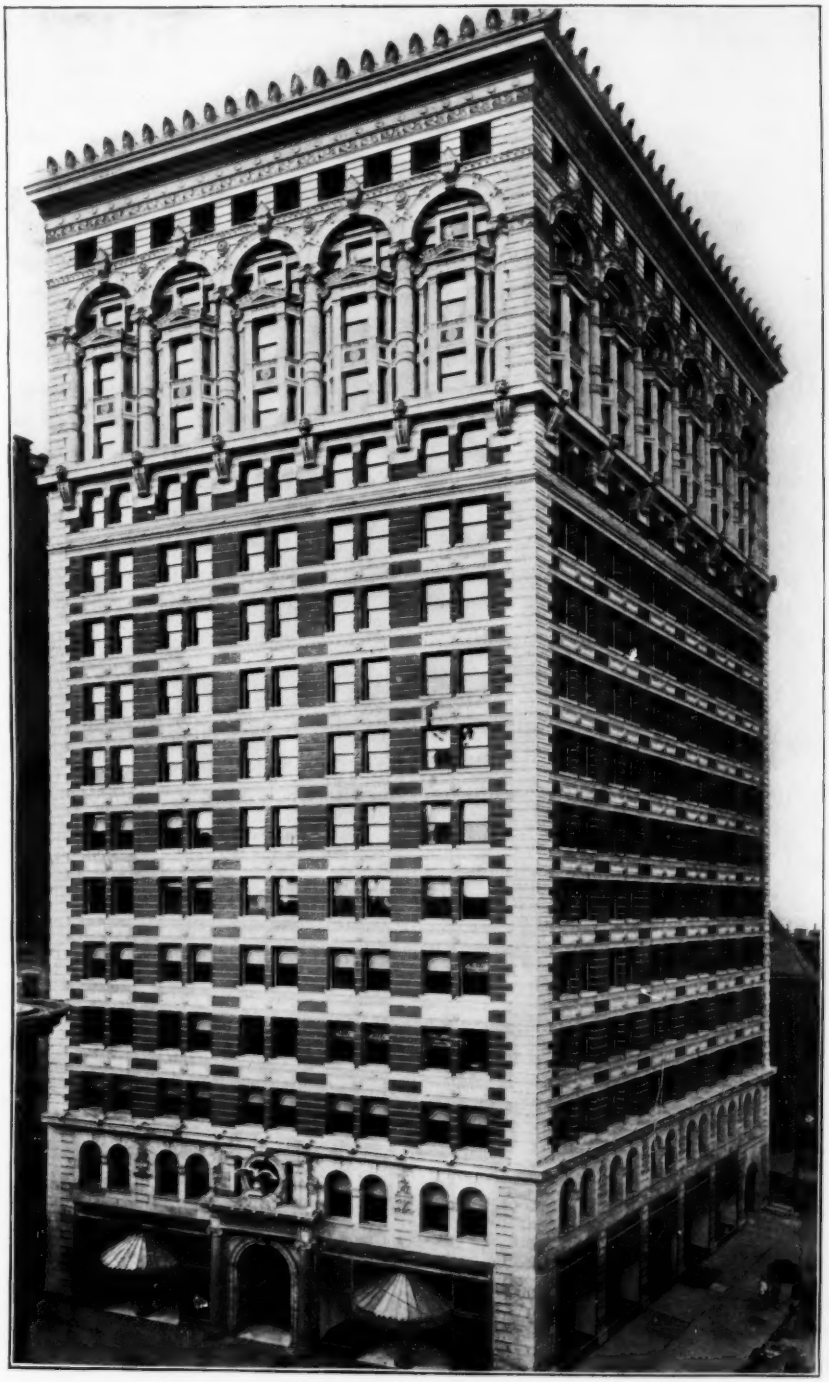
ST. PAUL BUILDING.

George B. Post, Architect.

builder and owner of the edifice, and this fact is properly enough recognized in signalizing the story in question by a somewhat greater ornateness, which, however, by no means amounts to a separateness of treatment.

Indeed, nothing is to be gained by cloaking or dissembling facts that everybody knows, and such a fact it is that the rentable stories of an office building are all identical in function and equal in dignity. An attempt to disguise this takes away from the architecture in which it is made the excuse of honest utilitarian necessity. The famous plea of the pickpocket is the best the "sky-scraper" can make for itself: "Il faut vivre." It is ill with that "sky-scraper" upon which the magistrate can retort "Je ne vois pas la necessité." To that crusher the architect exposes his sky-scraper who makes capricious distinctions between stories that everybody knows serve similar purposes. The St. Paul is laid wide open to it by the presentation of its stories as half stories, and the inclusion of two of them in each apparent story, as is done throughout the "architecturesque" part of the work, the three-sided tower faced with limestone, that occupies the truncated angle, and is crowned by the rich order. Doubtless the doubling of the stories "gives scale," and a swaggering aspect to the structure, and avoids the squareness of the openings that would result from leaving the actual arrangement undisguised. But it is plain even from the architecturesque parts, that the facts have been suppressed instead of being expressed. A cellular arrangement as equal and monotonous as that of a honeycomb has been overlaid by an architectural arrangement which has as little as possible to do with it, and deprives it of its one excuse for being, that it is as it must be. "I do not see the necessity," the spectator may and must exclaim. The tall and lanky opening which results from overlaying the real wall with an architectural trellis is no more graceful a form than the nearly square opening which would have ensued if the wall had been let alone. It is true that the orders could not have been applied. But it is very questionable whether the ten orders are as effective as the twenty actual stories would have been. In any case the twenty superposed stories appear alongside, in the parts that are not architecturesque, and put the architecture to an open shame. Not only do we not see the necessity, but we see that there is no necessity, and a caprice like that is fatal to a building which must be justified by its necessity or not at all.

Upon the whole the most successful of the sky-scrapers are those in which the shaft is made nothing of, in which the necessary openings occur at the necessary places, are justified by their necessity, but draw no attention to themselves. They become impressive not as units, but as a series, and this may be a very fine impressiveness. Rectangular holes are not pretty, but ten stories of them all alike



ST. JAMES BUILDING.

Broadway and 26th Street. Bruce Price, Architect

are sure of making their effect. In the St. Paul, the unarchitecturesque fronts which the spectator is requested to ignore, but cannot, in which the square holes stand confessed and nothing is done to them, are to one spectator more impressive than the evidently factitious architecture alongside of them. They would be more impressive still if the cornices which mark the arbitrary architectural division of the truncated front were not continued across them to the impairment of the effect of reality that they would produce if they were left alone, and to the interruption of a monotony so often repeated that it would become almost sublime. The question which Lord Melbourne was in the habit of asking his colleagues, when they asked what ground he meant to take on some new political issue, is one which might properly be addressed to a good many designers of sky-scrapers who are solicitous what to do with the main body of their buildings: "Can't you let it alone?"

Of course, a shaft can be effectively variegated without denying either the equality of importance and similarity of purpose between its different stories, or compromising its own importance as an organic part of the building. This may be done, as we shall see hereafter, by the introduction of moulded ornament in terra cotta, which is so plastic that it seems to require ornament, and in which elaborate ornament is so cheap, if it be often repeated, as not to be out of place even in a building of bare utility. It may also be done in color, and that is one of the lessons of the St. James, on many accounts a very interesting building. It is doubtless a good thing that most of the designers of tall buildings have avoided any contrast of color, and have brought their baked clay as nearly as might be to the tint of their stone work. There is safety in monochrome, and whoso departs from it does so at his peril. But few critical observers of the St. James will be disposed to deny that its designer has vindicated his right to leave this safe refuge. It is a pity, of course, that the emphasis of color should not go with the emphasis of structure, that the weak tint should cover the frame and the strong tint the filling. It is a mistake to introduce recessed courses in a screen of red brick for the sake of the shadows, and then to nullify the shadows by introducing a course of white brick at the bottom of the recess. But the middle part of the St. James is nevertheless effectively relieved of monotony without denying the identity of purpose in its different stories and without confusing the composition.

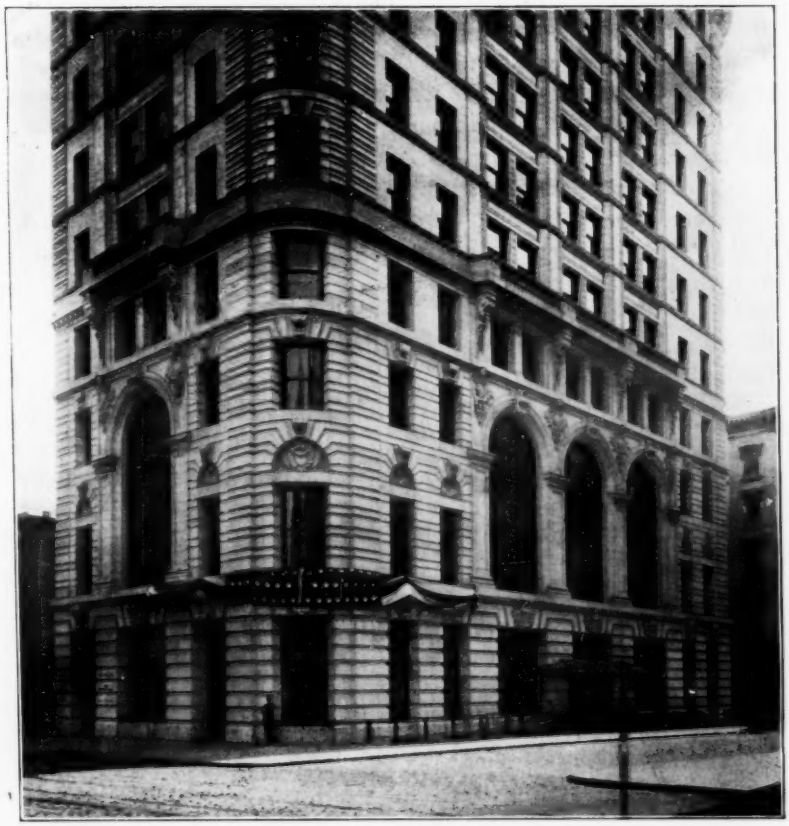
This successful exception does not invalidate the rule that the shaft is impressive by its extent and its monotony of repetition, and as an interval of plainness and repose between the more elaborate base and the elaborate capital. It is these features which may properly appeal to attention on their own account, as well as on account of their contribution to the total results. The ornament which is

meant to be worthy of the closest inspection is naturally given to the base, although the capital is properly the more ornate member. There is a dictum of Ruskin which is rather exceptional among his dicta as being the expression of mere and obvious good sense. Ornament, he says, may be, or must be, in greater effective quantity at the top of a building, but the most exquisite should be kept at the bottom. Accordingly all the designers make their entrances as well worth looking at as they can, and, indeed, it would be a solecism not to signalize the means by which a population mounting into the hundreds gains and leaves its place of daily business. Perhaps the commonest device for giving importance to the entrance is to extend it through two stories. Of course this device in a building of which the primary purpose is to get the maximum of rentable area is illogical as well as wasteful. But it must be owned that the architects who have fined their clients in the rental value of the space in the second story over the entrance, space which might have been rented for a hundred pence and given to the poor owner, get their architectural compensation from the process. The Broadway entrance to the Singer Building has the air of a burrow, and there is an inadequacy bordering on meanness in the actual entrance to the Park Row. Many designers who, although on architecture they are bent, have yet a frugal mind, reconcile their conflicting emotions by confining the actual entrance to the ground floor, and still signalizing it by some special treatment of the opening above it, with which the entrance is supposed to be architecturally incorporated. This is the arrangement adopted in the Dun Building, where, indeed, in the Broadway front, the "feature" is not even over the entrance, and in the longer front of the Singer Building. In the St. Paul it is the sculptured figures which are represented in the act of carrying twenty stories of wall that emphasize the entrance without sacrificing space. In the Washington Life it is the two-story order at the centre of the longer front, which is too nearly an engaged order to constitute or represent a portico, and has the air of having been set up against the building. The same thing is true of the much larger and more conspicuous order in front of the New York Life, an impressive feature in itself which loses much of its impressiveness when it is seen in connection with the building with which it is not architecturally incorporated. The effect of the actually engaged order of the American Surety Building, with the columns in antis behind it is very much better than either of these inadequately projected orders, and is, indeed, about the most successful entrance upon this scheme that any of the tall buildings has to show. Another scheme is that of confining the entrance to the ground story, and surmounting it with a decoration which does not pretend to subserve any other function than that of signalizing it. This is the case



SINGER BUILDING.

Northwest cor. Broadway and Liberty St. Ernest Flagg, Architect.



THE DUN BUILDING

Northeast cor. Broadway and Reade St. Harding & Gooch Architects.

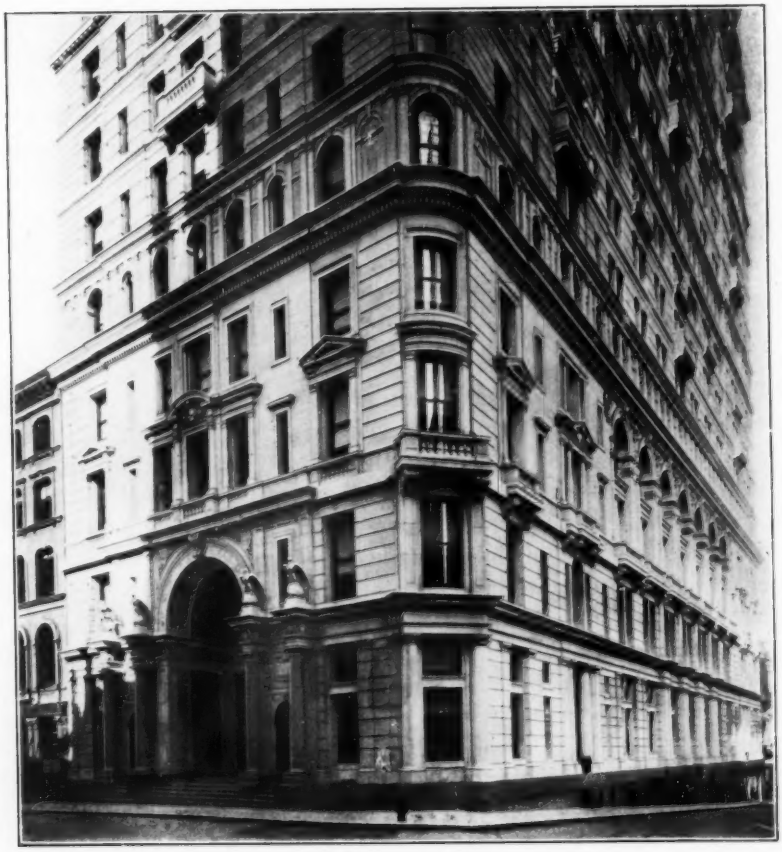
with the free standing circular pediment or panel over the entrance to the Bayard Building, and it may be commended as an example to such architects as are quite sure that they can equal the author of that work in the attractiveness of their surface decoration. To other designers it may be said that the most eligible method of giving importance to their entrances seems to be that of running the opening into the second story if they can gain the consent of their owner to that sacrifice.

The entrance is in most cases the chief feature of the basement, of the architectural base. But it is not the only feature—and, indeed, the most effective treatment is that in which the whole substructure becomes a feature. If one is to forego detailed functional expression in favor of abstract architectonics, the height of a commercial building before the elevator came in suggested a height of base which is in agreeable proportion to the "sky-scraper." This suggestion has been acted upon by many designers who have underpinned the shafts of their tall buildings with a four- or five-story building, designed as such and fairly complete in itself. The basement of the Dun Building offers a very fairly successful example of this treatment. The crowning member, including all above the eleventh story, seems distinctly infelicitous, both in proportion and treatment, and the variegation of the shaft sufficient to destroy the effect of repetition, which becomes more impressive in proportion to the extent of the series, without substituting any other. But, granting the author his two-story openings, which may at least conceivably light a lofty apartment with a mezzanine floor, the four-story basement seems to me a very well designed building, a composition fairly complete in itself and at the same time a fitting preparation for the superstructure. In this latter respect the executed work is a distinct improvement upon the original design, which showed the basement as a five-story building with a quite unmeaning trophy to signalize the entrance which it does not designate, and especially with a continuous balcony which emphatically cuts it off from what is above. The restudy the basement has received has done it a great deal of good. The removal of a story from the lofty openings has made them much more tractable. The omission of the huge window-frame of the front is a clear gain. But especially the confinement of the balcony to the centre of each front, while continuing its line in a belt along the interval of wall, while it still leaves the basement to assert itself as a feature, also allows it to be allied with the superstructure, and substitutes at the angle the effect of continuity for that interruption.

The effect of the triple arcade in the long front of this basement has been very much amplified and extended in the long arcade which is the most striking feature of the flank of the Empire Building. This flank, confronting Trinity churchyard, and thus having as good an

assurance of permanent visibility from an effective distance as can be had in New York, offered a very unusual opportunity, of which it will not be disputed, that, so far as this arcade is concerned, the designers have fully availed themselves. Doubtless the tenants of the floor above the springing may consider that they have been sacrificed to architecture. But this arcade of seven openings, on a scale twice that employed elsewhere in the building or in its neighbors, is really architectural, really a stately series, with its effective abutment of a much more solid flank of wall and its effective correspondence in scale with the order, also embracing two stories, at the top of the building. It must be now evident how much these two features, and with them the building, would gain in effect if the interval between them were an interval as nearly as might be of complete repose, a repetition twelve times of an identical design for a story of offices.

But it is the crowning member, the capital, which offers the greatest opportunity for individuality and variety of treatment. It is apt to be the only part which is visible from a distance. Anything like conformity is out of the question. New York has no skyline, and is not likely to have any, so long as the estimates of the most profitable height of commercial buildings vary from ten stories to thirty, and as the law does not intervene to draw the line of altitude. It is impossible for a designer to conform to what exists, much less to what may exist after his building is completed. All that he can do is to make his own building as presentable and shapely as the conditions will admit. It is maintained by some critics that a strict adherence to the conditions compels an architect to stop with the completion of his paralleloped, and to forbear a visible roof. Doubtless the flat roof enables him to fill his honeycomb level to the top with a row of cells for the working bees. But it does not enable him to give any form or comeliness to the skyline of his building. The parallelopiped is not an architectural form, as anybody will have impressed upon him by looking at the random row of parallelopipeds in lower New York from across the East or the North river. The practical owner may have had some reason who objected to his architect's design for a steeply-roofed ten-story building, upon the ground that "That's all right on the Rhine, but it ain't business." Nevertheless, he was insisting upon a defacement of the city, which is in great part wanton. For a visible roof will obviously supply additional accommodation at a less cost than that of building "to the limit" all the way up. Few sensitive spectators can have observed from afar the towering mass of the American Surety Building without feeling that the tall shaft needs the crown that would convert it into a campanile. On the other hand, few sensitive spectators can have failed to experience a touch of gratitude to the archi-



EMPIRE BUILDING.

Southwest cor. Broadway and Rector St. Kimball & Thompson, Architects.



AMERICAN SURETY CO. BUILDING.

(Across Trinity Churchyard.) Bruce Price, Architect.

tect of the American Tract Society for having enclosed part of that edifice in a picturesque hood, even though the hood be avowedly extraneous to the building, which is visibly enclosed in it and completed without reference to it. The St. Paul has no visible roof, but it has a true crown in the tall order, incrusted with decoration effective from every point from which it can be seen at all, which surmounts the three-fronted tower which the architect has arbitrarily set off as the "architecturesque part" of his building, leaving the architecture of the more shameful parts to take care of itself. This crown is in itself a grateful object, and the more grateful from a point of view from which the edifice it crowns cannot be made out in detail and may be ignored. Of substitutes for a visible roof, in cases where the architect felt bound to build to the limit, vertically and laterally, one of the most successful is the crowning order of the St. James, with an oriel framed in metal in each intercolumniation, and the effect of the whole feature greatly enhanced by its projection from the plane of the wall below. This overhanging of the top is evidently as feasible and legitimate in a steel-frame as in a timber frame, in which it has been so often and so effectively employed. It offers an architectural opportunity which it is strange should not have been oftener embraced. In the present instance, it has been done rather timidly, as very likely it had to be. But in a free-standing building, or even in a corner building, it seems that it might sometimes be done more boldly and with a corresponding increase of effectiveness.

The same device is employed, though with even less emphasis, although to an excellent result, in the Washington Life Building. This building is acclaimed by everybody as one of the very best of the sky-scrapers, and it owes its whole effectiveness to the treatment of the capital, to the introduction and the treatment of a visible roof. The base is without pretensions, except in the portico of the entrance, where, as has already been remarked, the practicable projection does not suffice to give it the effect of a portico, while on the other hand it is not incorporated with the building. The shaft is reduced to its very simplest expression, a mere repetition of the openings of the tiers of cells, which leaves it as nearly as may be a plain shaft. The detail of the lower stories, successful in scale and careful both in design and execution, offers nothing striking. But the steep wedge-shaped roof seems to have been designed "not laboriously, but luckily." It gives character to the building below it and makes it a picturesque object equally in a near and in a distant view. The projection of the order, slight as it is, is very effective, almost indispensable as a detachment of the capital. The dormers are exceedingly well designed in themselves and most effectively relieved against the greenish bronze of the tiles, the color of which is one of the chief successes of the work, from the pictorial point of view.



THE WASHINGTON LIFE BUILDING.
(From the West.)
Southwest cor. Broadway and Liberty St. Cyrus L. W. Eidlitz, Architect.



THE WASHINGTON LIFE BUILDING.
(From the East.)

Southwest cor. Broadway and Liberty St. Cyrus L. W. Eidlitz, Architect



WASHINGTON LIFE BUILDING

Broadway and Liberty St., N. Y. City. Cyrus L. W. Eidlitz, Architect

The widening of the building at the rear gives rise to an unavoidable awkwardness in the roofing, as seen from the south, the quarter from which the illustration of the Broadway front is taken. The awkwardness is mitigated as much as possible, and will disappear when the side comes to be concealed by another tall building. This contingency is contemplated by the evidently provisional treatment of the south wall, a treatment which is an unusually judicious compromise between the conflicting claims of the owner's pocket and the architect's wish to bestow comeliness upon "the more shameful parts," and to make them presentable so long as they are visible. Meanwhile, however, the most favorable view of the Broadway front is that from the northwest, from which the provisional architecture is not seen, and which the illustrations do not include. Our street architecture offers very few glimpses so satisfying as that of this wedge of furrowed bronze, with the single bold dormer, so lucky in scale and in design, relieved against it. Not less good in its way is the broad northern flank with the four dormers, and scarcely less good the west front, which "shines over city and river" standing knee-deep in the lower buildings of the waterfront. If this had been the principal front, the architect would very probably have introduced a single dormer above, to unite and dominate the two, and thus have reproduced the effect so familiar and always so effective in the timber work of the German Renaissance. The conspicuous roof, with the separate treatment of the upper stories of the wall, emphasized by the order, and the slight expansion which it marks, constitute the capital of the building, and it is plainly a feature with which no equal and uncompromising parallopiped, built to the limit in all dimensions, can at all compete.

* * * * * * * *

All the buildings thus far mentioned have been designed in general conformity with the convention which enforces not only the Aristotelian triple division, but the more specific analogy of the column. But it should not be forgotten that the assumption of that analogy, convenient as it is, is, after all, only an assumption, and a more or less arbitrary assumption, since it not only does not facilitate, but may even obstruct, the detailed expression in design of structure and of function. That the Aristotelian maxim itself is an assumption, or that the application of it to architecture is arbitrary, not many designers or critics can be prepared to admit. It is not necessary that they should be psychologists, and able to explain in words why a building triply divided should be more "agreeable to the spirit of man" than a building which consists from top to bottom in tiers of similar cells, any more than that they shrould be able to explain why in fenestration the arithmetical progression 3, 5 and 7 is agreeable. On either point they can safely take an appeal to universal

consciousness. Securus orbis judicabit. But it is also true that the "sky-scraper" is in fact a series of equal cells, and that the only suggestions for a triple division that inhere in the conditions are the facts that the ground floor has a different destination from that of the floors above, and suggest a distinctive treatment of the bottom, and the fact that a visible roof or in default of it the necessity for a protective and projecting cornice, compels a distinctive treatment for the top. Almost without exception, the designers of the tall buildings make a further assumption, which is not only arbitrary but manifestly baseless, and that is that in designing them they are designing buildings of masonry, instead of merely wrapping skeletons of metal in fire-resisting material. That basements should be more solid than superstructures; that arches should have visible abutments; that walls should "reveal" their thickness; these and many more of the traditions of masonry have no relevancy at all to the new construction. If architects make and we allow these assumptions, we ought not to forget that they are baseless assumptions, and that the best work done according to them is not a solution, but an evasion of the problem presented by the modern office building. That is why an aberration, a "deviation from the customary structure or type," is not necessarily condemnable, may, on the contrary, be highly laudable. It all depends upon whether the departure is a mere caprice of the designer, or an attempt to come closer to reason and reality than is possible under the conventional treatment.

Decidedly an aberration is the Singer Building in lower Broadway. This scarcely comes within our scope, since the building is not an example of the skeleton construction, and rests at the modest ten stories, which seems to be the commercially practicable limit of a structure with real walls. Considering the enormous costliness of the land on which it stands, this self-restraint indicates either a very obstinate or a very facile owner, who may well be astonished at his own moderation in contenting himself with half the rentable area he might have had. Commercially, and in spite of the brand-newness and smartness of its modish Parisian detail, the Singer Building is a reversion, advantageous as it might be, on civic grounds, to restrict the height of all commercial buildings to the height to which its owner has voluntarily restricted himself. Moderate as this height is in comparison with the neighbors it has yet seemed excessive to the architect, who has bent his efforts to the task of keeping it down. This he has done by a triple division, accentuated not only by horizontal members emphatic to the verge, if not beyond the verge, of extravagance, but by a change of material in the different divisions, the lower being a monochrome of light stone and the middle a field of red brick relieved with stone. Nay, the principal divisions are so emphasized and the subordinate divisions so

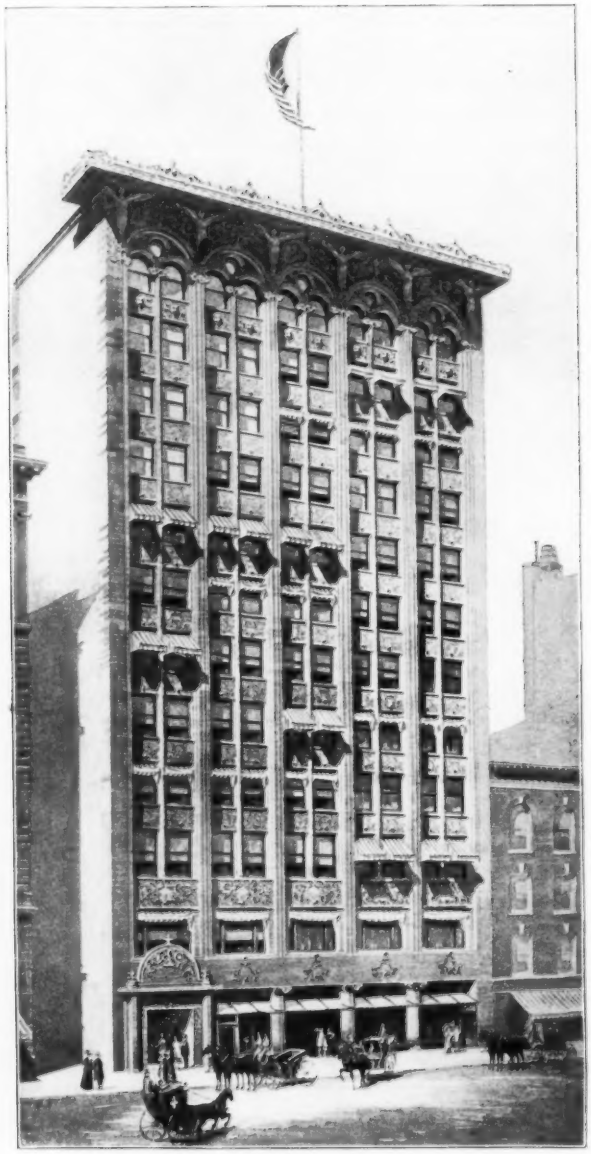


THE PARK ROW BUILDING.

New York City. R. H. Robertson, Architect.

slurred that a ten-story building presents the appearance of one of three stories, with a corresponding exaggeration of scale. At least until a legal limit is put upon the height of buildings, this is likely to remain unique. But while it does not invite imitation, one has to own that a thing of which it is questionable whether it was worth doing has been unquestionably well done.

Of another deviation from the customary type, the Park Row Building, it is not easy to discern the motive. This structure has the distinction, which is to be hoped it may retain, of the tallest yet, and confronts the next tallest, the St. Paul, across the street which is more properly an alley. It can scarcely be said to be "by merit raised to that bad eminence," although, like its neighbor, it has the salutary effect of a warning rather than of an example. In each case there are inherent awkwardnesses in the problem which were obviously difficult to surmount, and which have obviously not been surmounted. But the design of the principal front of the Park Row, which in effect comprises the architecture, is noteworthy for its rejection of the convention upon which most of the recent tall buildings have been designed, without substituting for it any scheme that is obviously more rational, or that is even readily apprehensible. Laterally there is an emphatic triple division, into flanking walls kept as plain and solid as the practical requirements will allow, and a more open centre, consisting of five superposed orders, not counting the two-story colonnade of the basement. The relation of these orders is by no means felicitous. Some are stilted on pedestals of a story in height, while others stand directly upon the entablatures of those below, without apparent reason. Vertically, there is no clear division. It is not apparent whether the first two stories or the first five constitute the architectural base. The upper five pretty clearly constitute the capital, being occupied by an order more developed than those below, although the cornice that marks them off from what is below is no more important than other horizontal lines which can have no such special significance. The sixteen stories below this cornice may be taken as the shaft, and by looking very hard, it is possible to discern that this is meant to be triply subdivided into a beginning of five stories, containing an order furnished with pedestals, a middle of seven, containing two orders directly superposed, and an end of four, containing another order, while the intermediate divisions are marked by balconies. But the principal and the subordinate divisions are so nearly equal in emphasis as to produce uncertainty and confusion, and to excuse the cursory observer for declaring that the front shows no composition at all. Without going so far as that, it seems safe to say that the architect would have done better if he had accepted and abided by the current convention.

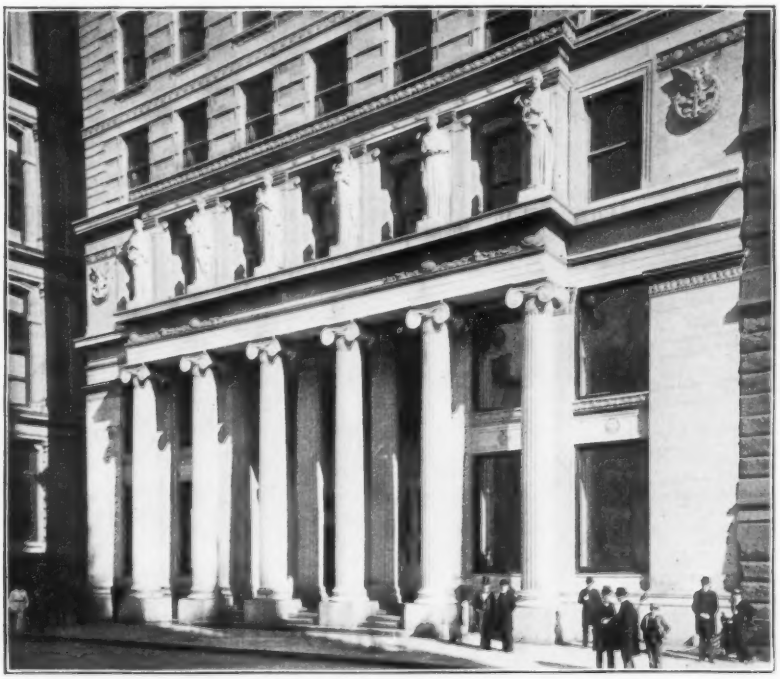


BAYARD BUILDING.

Bleecker Street. Louis H. Sullivan, Architect

Very different is the aberration presented by the Bayard Building in Bleecker street. There is nothing capricious in the general treatment of this structure. It is an attempt, and a very serious attempt, to found the architecture of a tall building upon the facts of the case. The actual structure is left or, rather, is helped, to tell its own story. This is the thing itself. Nobody who sees the building can help seeing that. Neither the analogy of the column, nor any other tradition or convention, is allowed to interfere with the task of clothing the steel frame in as expressive forms as may be. There is no attempt to simulate the breadth and massiveness proper to masonry in a frame of metal that is merely wrapped in masonry for its own protection. The flanking piers, instead of being broadened to the commercially allowable maximum, are attenuated to the mechanically allowable mimimum. Everywhere the drapery of baked clay is a mere wrapping, which clings so closely to the frame as to reveal it, and even to emphasize it. This is true at least of the uprights, for it seems to me a defect in the general design, from the designer's own point of view, that it does not take enough account of the horizontal members. As anybody may see in a steel cage not yet concealed behind its screens of masonry, these are as important to the structure as the uprights. In the Bayard they are largely ignored, for the panels which mark the different floors are apparently mere insertions, answering no structural purpose, and there is no suggestion of any continuous horizontal members, such as, of course, exist and are even necessary to stability. Mr. Sullivan, some years ago, wrote a very interesting paper on the æsthetics of the tall building, of which the fundamental position was that form must follow function, and that "where function does not vary form does not vary." These are propositions from which nobody who believes that architecture is an art of expression will dissent, and with which the present writer heartily agrees. But in applying them to the case in question, Mr. Sullivan declared that the lower two (or possibly three) stories of a tall office building had a destination so different from that of the superstructure, that a distinguishing treatment for them was not only required but demanded, and that the uppermost story in turn, being in great part devoted to the "circulating system" of the building should also be differentiated. I remember suggesting to him that it was in fact only the ground floor which could be said to differ in function from its successors and that his inclusion of additional stories may have been inspired by an instinctive desire to obtain a base more proportional, according to our inherited notions of proportion, to a lofty superstructure than a single story could furnish. However that may be, in the Bayard it is the ground floor that is treated as the base. Even the second story "counts in" with the superstructure, to which logically it be-

longs. In spite of the separate treatment of the ground floor, the continuity of the structure is felt and expressed, even in the design of the capitals, which are plainly not real capitals, spreading to carry a weight of greater area, but mere efflorescences of decoration. It is not a question whether two or three stories would not be more effectively proportional to the superstructure than one. Is is a question of fact. The result, whatever else one may think of it, is a sense of reality very different from what we get from the sky-scrapers designed on conventional lines. It puts them to the same sort of



PORTICO OF THE AMERICAN SURETY BUILDING.
Bruce Price, Architect

shame to which the great roof trusses of the Manufactures Building in Chicago put the imitative architecture with which they were associated. Not that the gauntness and attenuation of the resulting architecture are in this case altogether agreeable to an eye accustomed to the factitious massiveness of the conventional treatment. But, at the worst, this front recalls Rufus Choate's famous toast to the Chief Justice: "We look upon him as the East Indian upon his wooden idol. We know that he is ugly, but we feel that he is great." We feel that this front is a true and logical exposition of the structure. If we find it ugly nothwithstanding, that may be our own

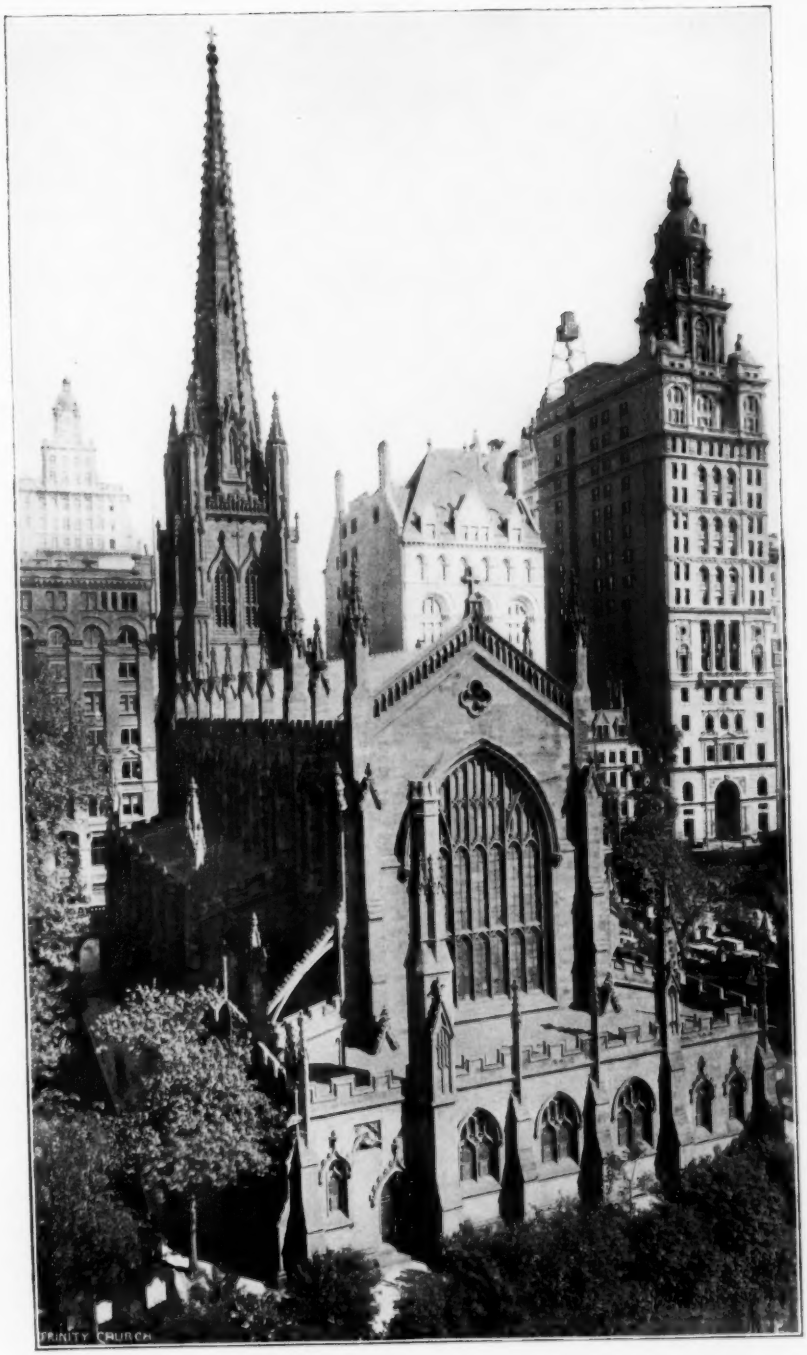
fault. If we can find no failure in expressiveness, the architect may retort upon us that it is no uglier than it ought to be.

Meanwhile the æsthetic, as distinguished from the scientific attractiveness of the Bayard Building without doubt resides in the decoration which has been lavished upon it, and which is of a quality that no other designer could have commanded. I am unable to agree with Mr. Sturgis's condemnation of the crowning feature of the building, in a recent number of this magazine, as "most unfortunate." In fact, the upper two stories are internally one story, the upper floor being a gallery surrounding a well extending through both, and lighted from above. Doubtless the arches and the rudimentary tracery are not forms of metallic architecture, but they do not belong to metallic architecture. The arches are in fact of brickwork, faced with terra cotta, and the thrust of them is visibly, as well as actually, taken up by the tie-rods at the springing. The intermediate uprights, the mullions, cease at this level, while the prolongation of the principal uprights is clearly denoted by the winged figures under the cornice. A designer who has adhered so strictly to the unpromising facts of the steel cage through eleven stories is scarcely to be severely blamed for "treating resolution" to this extent in the twelfth. If the building, apart from its wealth of decoration, recalls the works of contemporaneous engineering rather than of historical architecture, that also is "as it must be." The Bayard Building is the nearest approach yet made, in New York, at least, to solving the problem of the sky-scraper. It furnishes a most promising starting point for designers who may insist upon attacking that problem instead of evading it, and resting in compromises and conventions.

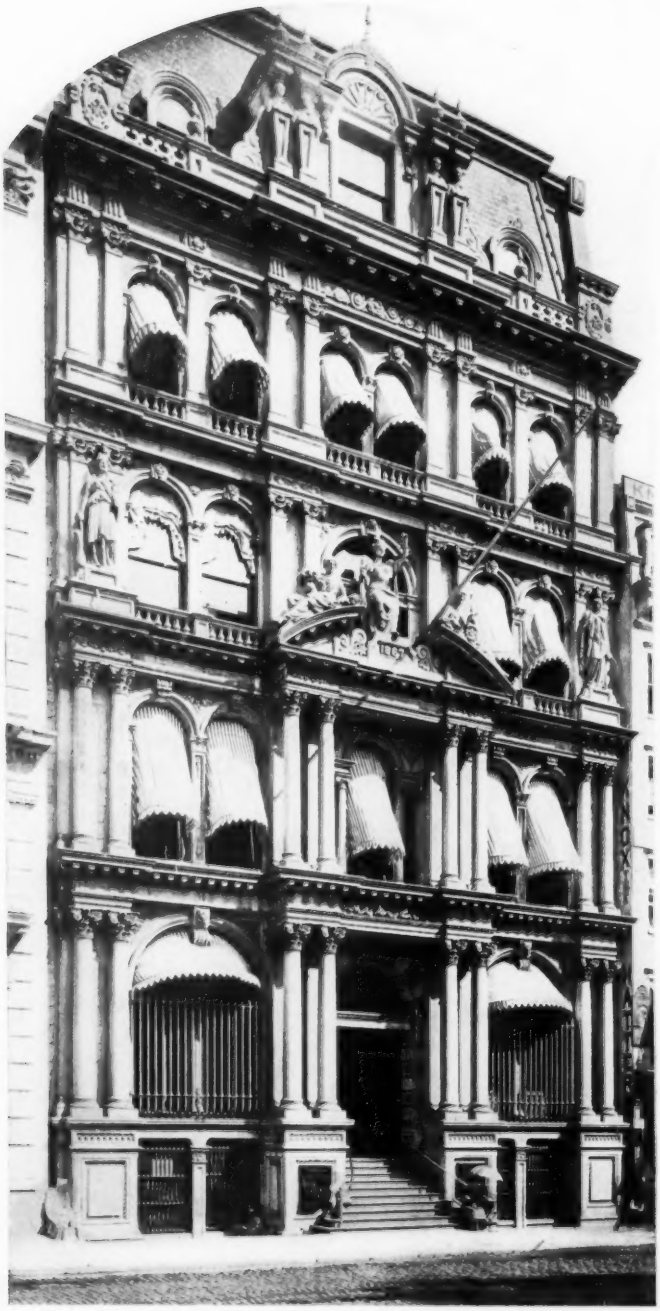
Montgomery Schuyler.



WASHINGTON LIFE BUILDING
From the Northeast.
Cyrus L. W. Eidlitz, Architect



TRINITY CHURCH AND NEIGHBORING OFFICE BUILDINGS.



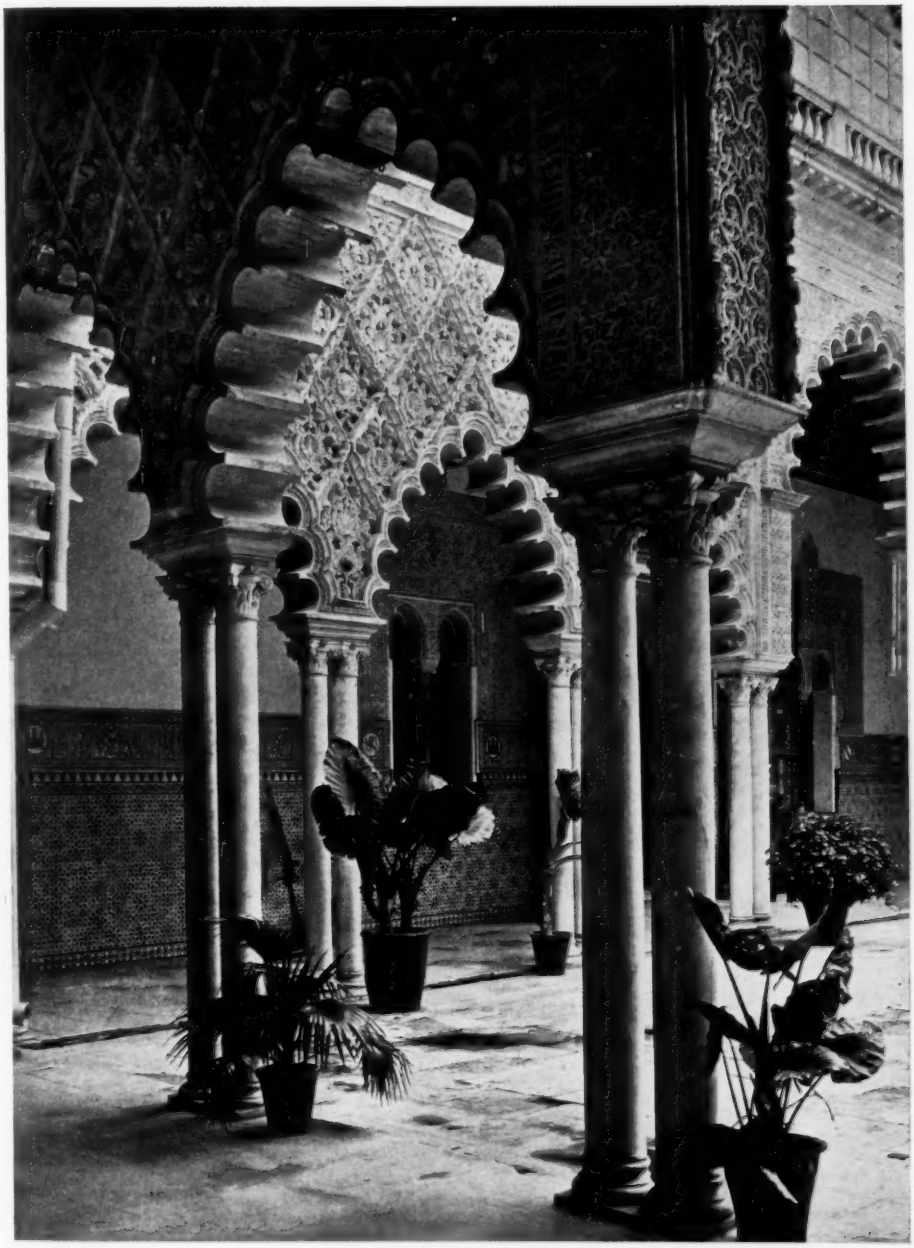
OLD STYLE OFFICE BUILDING -THE PARK NATIONAL BANK, 1867-8.
Broadway, New York City.

The Alcazar,

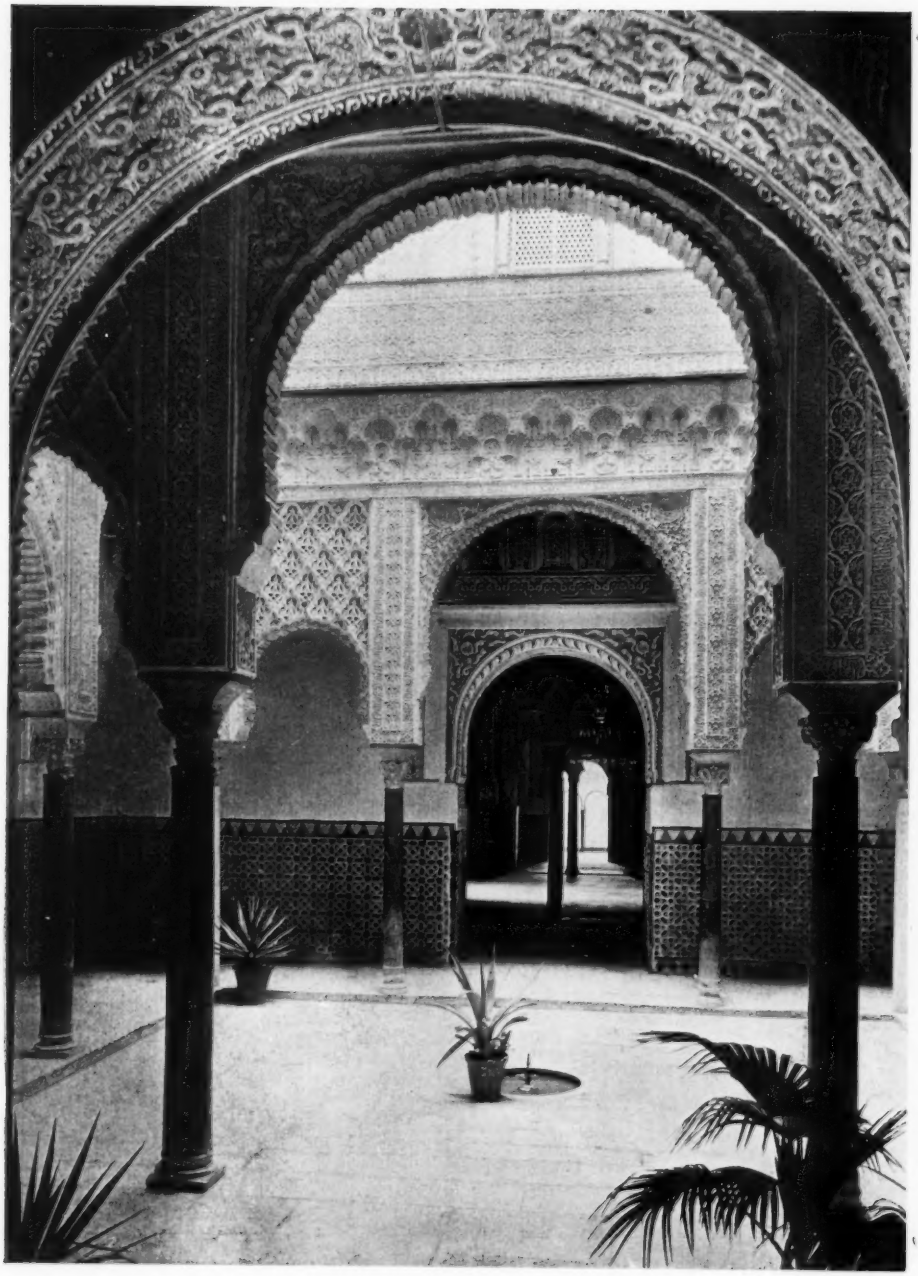
Seville, Spain.



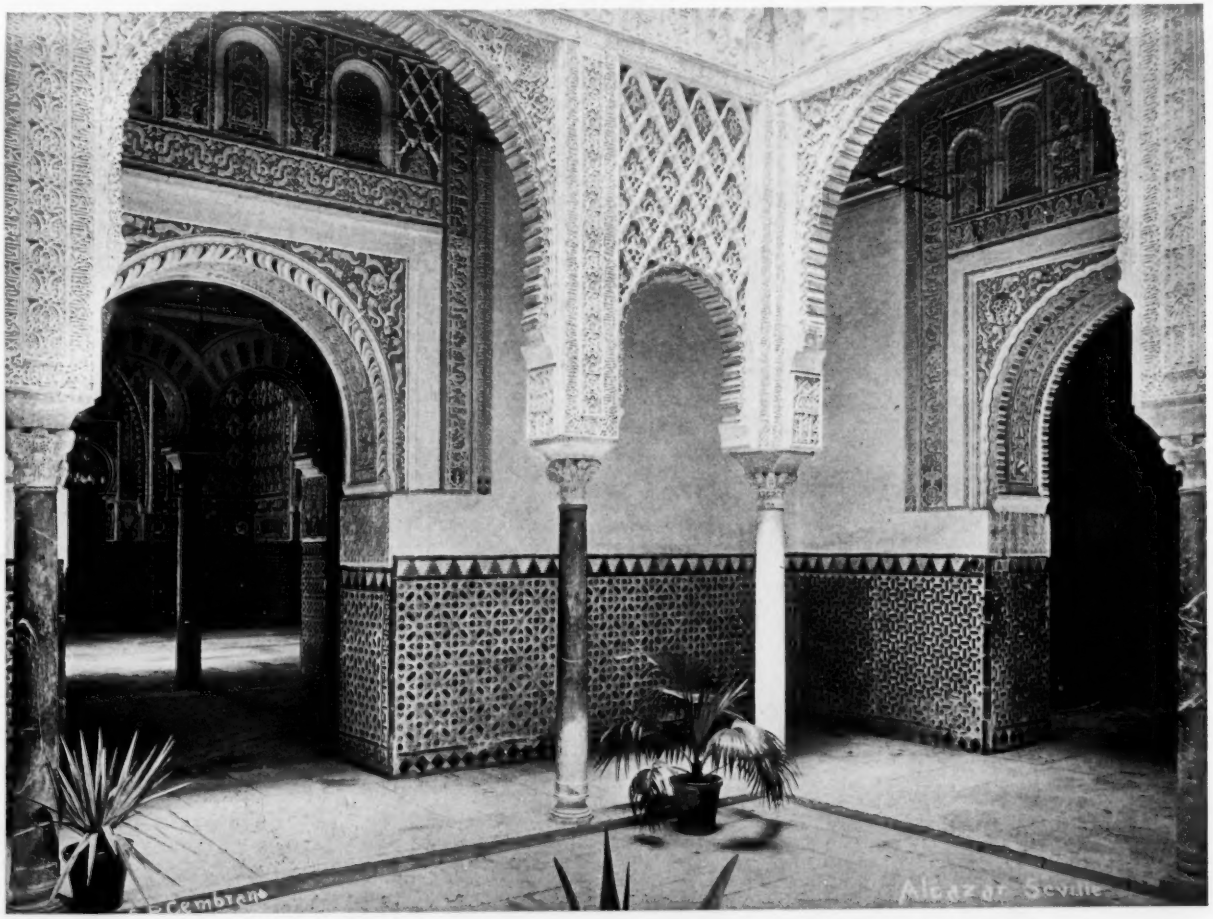
THE ALCAZAR, SEVILLE, SPAIN.



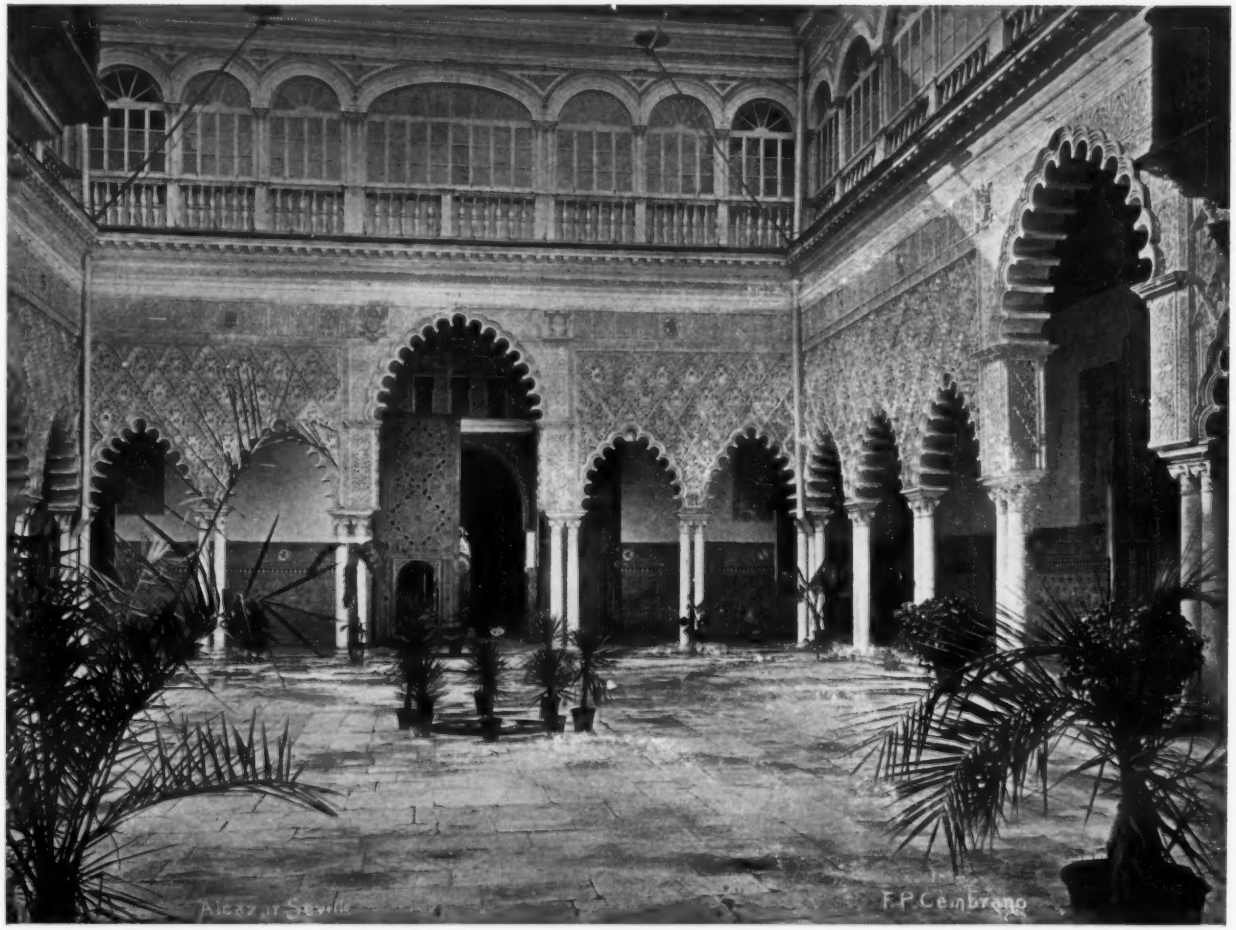
THE ALCAZAR, SEVILLE.



THE ALCAZAR, SEVILLE.



THE ALCAZAR, SEVILLE.



THE ALCAZAR, SEVILLE.

Architectural Views

of Old and New

Brooklyn

THE ALCAZAR, SEVILLE.



OLD SUYDAM RESIDENCE, EVERGREEN AVENUE, BROOKLYN.



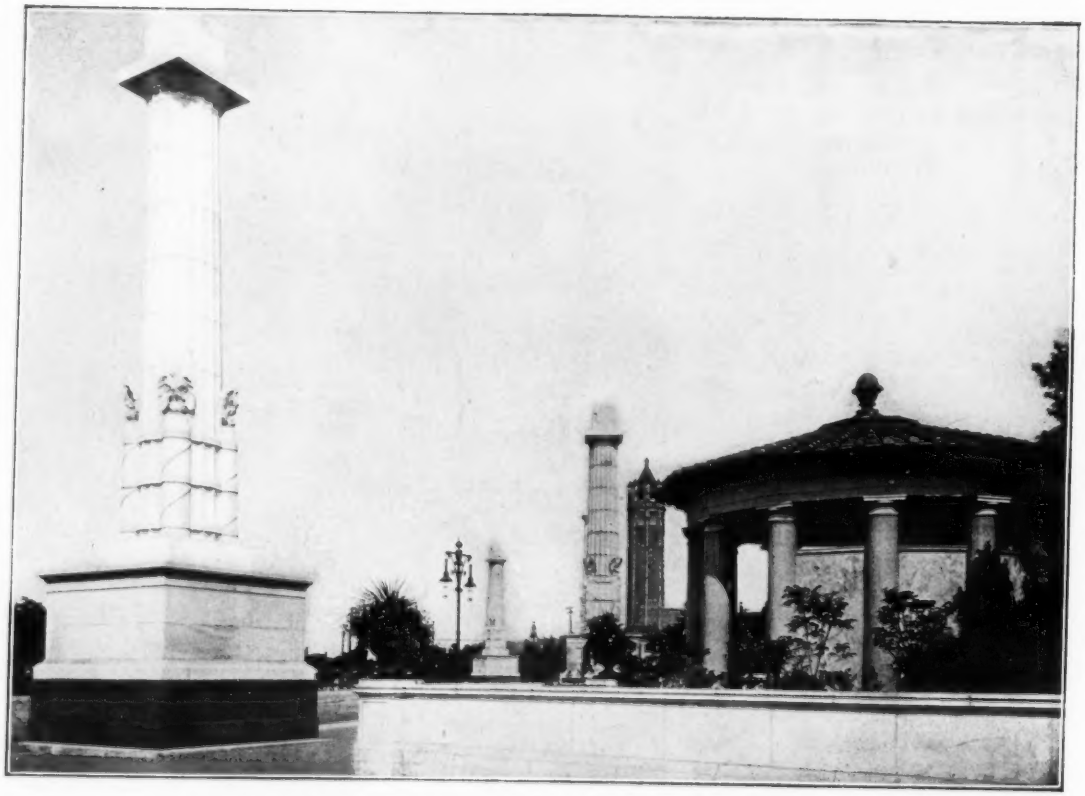
OLD DUTCH REFORMED CHURCH, FLATBUSH AVENUE, BROOKLYN.



"MIDWOOD," FLATBUSH AVENUE, BROOKLYN.



MEMORIAL ARCH, BROOKYN.



ENTRANCE TO PROSPECT PARK, BROOKLYN.

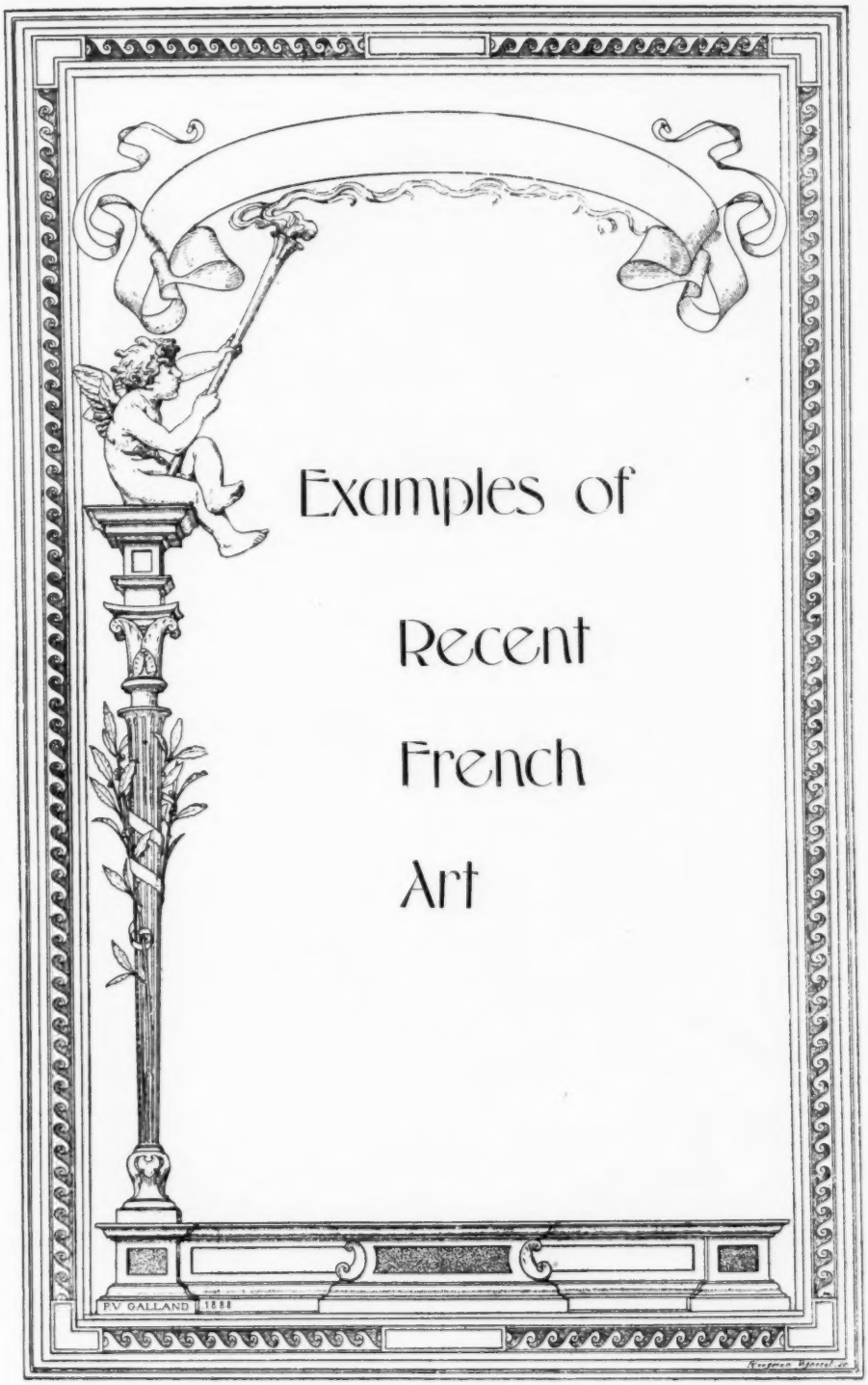


BUILDING OF THE SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

Schermerhorn Street, Brooklyn.

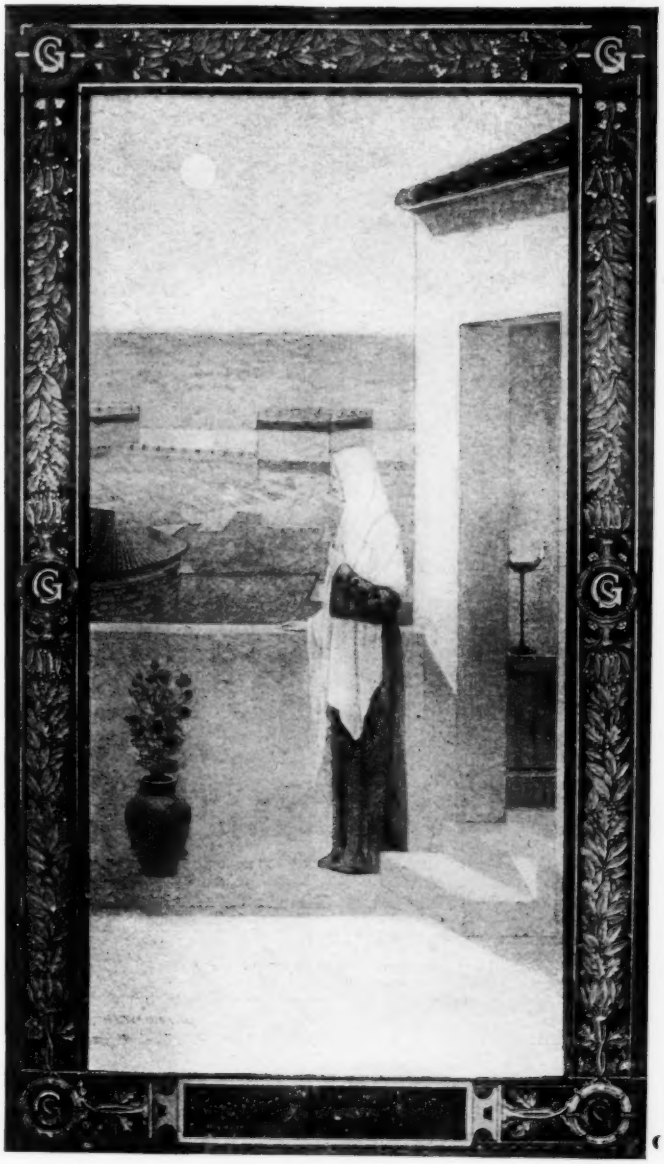


MECHANICS' BANK BUILDING.
Fulton and Montague Streets, Brooklyn.


Examples of
Recent
French
Art
PV GALLAND 1888



ELECTRIC LIGHT DESIGN, BY M. GUYOT.
(Portefeuille de la Revue des Arts décoratifs.)



PAINTING INTENDED FOR THE PANTHEON.
Puvis de Chavannes.





TIGERS AND LIONS.
For the Chateau de Vaux-le-Vicomte, G. Gardet.

THE CATHEDRAL OF TROJA.

VAGUE memories of a mention in Fergusson hastily read some thirty years ago had inspired me with a wish to visit Troja during the Apulian trip, which was described in the last Number of the "Architectural Record." What was to be seen there was, however, by no means clear. If an Italian Cathedral is not mentioned by Jacob Burckhardt's "Cicerone," it may be taken for granted that it is not worth visiting, and Burckhardt mentions only the bronze doors at Troja, and does not otherwise even mention the Cathedral. The same oversight has been made by Huillard-Bréholles, one of the supposably special authorities for Apulia, and Burckhardt has probably relied on this authority. At the time of this trip I had no knowledge of the monumental publication on Apulia by Schulz, which has been quoted and described in the last number of the "Architectural Record." Murray mentions a "fine Cathedral," but the remark that "the interior shows some traces of the architecture of the Lower Empire" is a curious anti-climax to the student, spurning restored interiors and searching for intact monuments. After one has really seen the interior capitals at Troja one quite despairs of Murray. Indeed they do show some traces of the architecture of the Lower Empire, being quite the finest things which the "Lower Empire" has bequeathed to the history of mediæval architectural detail. Bædeker's hint of "an interesting Cathedral with ancient bronze doors" was vague and encouraging, although not comprehensive; but the remark in Bædeker that Troja was a Byzantine colony was the really inspiring cause of the resolution to see for oneself what kind of a thing this interesting Cathedral might be. The Italian surveys of 1895, which have been described in seven numbers of the "Architectural Record," were inspired by the belief that Byzantine architecture was the source of the mediæval refinements of Pisa and of Venice. Hence the fixed resolution to visit Troja, as a known Byzantine centre. The discovery of the curious schematic variations in the arcades of the south wall which rewarded this resolution has been previously published, but the survey of the south wall is reprinted in this issue (page 293). See also the ground plan on page 295 and remarks on its peculiarities as also found in other churches in No. 3, Vol. VI.

In this case a fixed resolution was an important factor in the problem. The guide-books tell one to go to Troja by way of Giardinetto, but they do not tell one that Giardinetto consists of one small railway station and one malarial station-master, and that it does not boast one single house, to say nothing of not having one

single public conveyance. The guide-books advise you to go by way of Giardinetto, but they do not advise you that the only connection from Foggia drops you at Giardinetto at five o'clock in the afternoon and leaves you to await the Troja diligence at five o'clock on the following morning, at this station, so-called, which does not offer



WEST FRONT, TROJA CATHEDRAL.

even the accommodation of a wooden bench or the comfort of a crust of bread.

The malarial station-master hates Giardinetto, where he lives, and Troja, which he has seen. As he was an Italian of some refinement and education, one could not listen to his depressing accounts of the Cathedral without forebodings that money and time would be wasted at Troja. Mr. McKecknie was with me with his camera and surveying instruments, and a proposal to walk the nine miles to



INTERIOR OF TROJA CATHEDRAL.

Troja that evening did not meet his approval. We were told of a farm-house a mile away where a horse and cart might possibly be procured. The farm-house was looked up and the owner was offered his own terms for transportation, but the farmer was rich and unimpressionable. Horses were to be seen in plenty about his place and vehicles of various descriptions. We offered to accept an ox-cart as a compromise, but nothing could be done with this Italian.

Two courses were open on return to the station. One was to take an evening train for Naples, the other was to return by rail to Foggia and there hire a carriage on the following day. The temptation not to go back to Foggia was a strong one, but Bædeker's mention of a Byzantine colony had made me obstinate. It happened to be the Fourth of July, and after our return to Foggia, Mr. McKecknie and I duly celebrated this festival by eating the supper which



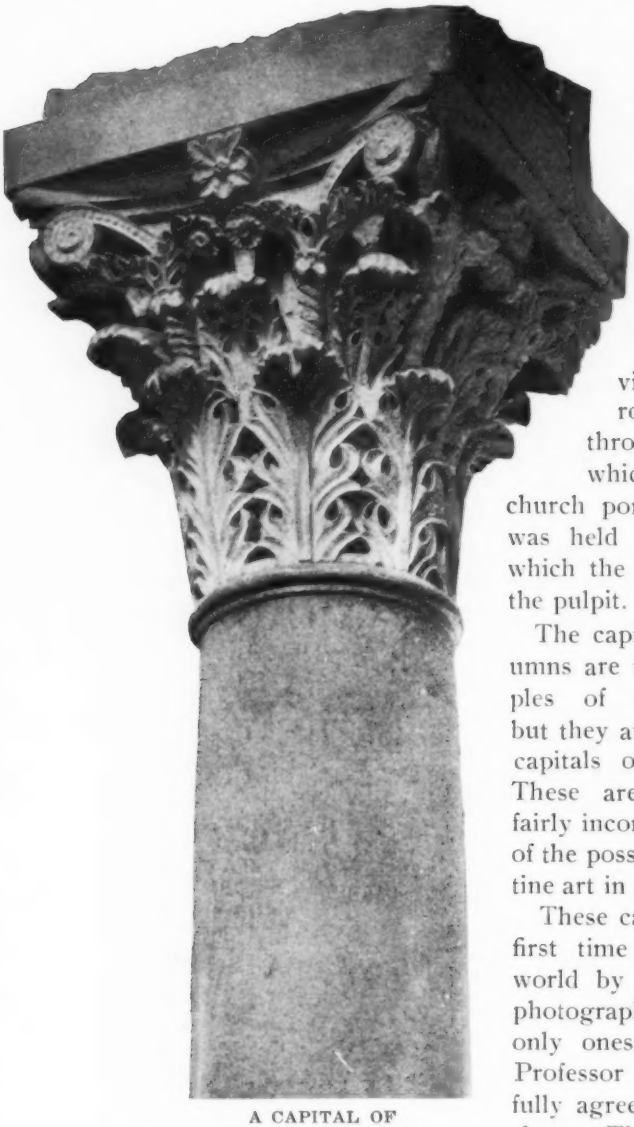
THE PULPIT, TROJA CATHEDRAL.

Giardinetto had refused us. On the following morning a carriage ride of twelve miles brought us to Troja.

As we drove up the single main street and stopped in front of the Cathedral the first glance was enough to show that we had found one of the greatest churches in Italy. Not one trace of a restoration was to be seen on the splendid exterior. It was all intact early twelfth century work. The interior proved to have a modern coloring on the walls, but, strange to say, this color is in excellent taste and harmonizes with the style of the building. There is no stucco, and the interior is, to my mind, the purest and most genuine survival of an important church in the style of one single period, to be found in Italy. There are no Renaissance chapels, shrines, or other disfigurements.

The remarkably fine pulpit (page 282) belongs to the style and period of the building, being dated to the year 1169 by its inscription. The relief of the animal combat is in a gray-greenish tufa, in contrast to the main body of the pulpit, which is of fine-grained yellowish limestone. This relief is undoubtedly the most remarkable work of its time in all Italy for style and action. It precedes the first pulpit of Niccola of Pisa, by nearly a century, but in Niccola's period or even in considerably later time it would be difficult to match the fury, vigor and realism of the action and its decorative composition in space. This relief has been published in engraving by Perkins in his "Italian Sculptors." Perkins, who does not appear to have known the original personally, follows Schulz in speaking of the larger lion as attacking a sheep. To my memory the animal attacked is rather a calf or young bull, an impression not antagonized by the engraving or by the photographs. In either case the design is undoubtedly a traditional survival of the representation of a lion attacking a bull, which in early Oriental art was an astronomical sign of the entry of the solar lion into the sign of the bull. The ceremony of loosing a trained hunting lion to attack a bull, as a celebration of the Vernal Equinox, was witnessed by Lajard, the French Ambassador to Persia, as recently as 1808. What, if any, symbolism, was attached to this subject by Christian art it would be difficult to say, for in the mediæval Bestiaries the lion is quoted as a symbol of both good and evil qualities, and of various and contradictory ideas. There is no other mediæval pulpit in which any similar subject is treated, and it may be purely decorative here. In ancient art, the solar significance of the subject was often indicated by association with the lotus, another solar symbol. This has also survived in the given relief, of course wholly without symbolism here, in the shape of a plant with a trefoil flower which crosses the body of the larger lion.*

*For Phœnician and early Greek representations of this subject, see my "Grammar of the Lotus," pl. xl.

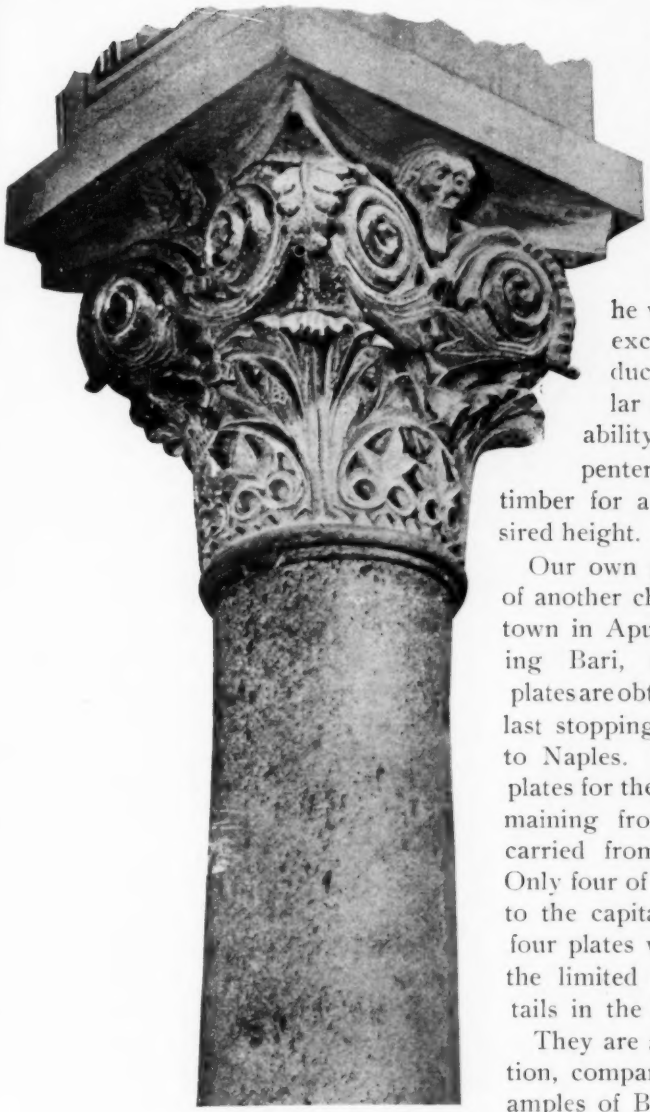


A CAPITAL OF
TROJA CATHEDRAL.

Moscioni's phototograph of the pulpit is superior to Mr. McKecknie's in the clearness of the ornamental borders, but the lion relief is in deep shadow in his picture. Our own is clearer in this respect, owing to Mr. McKecknie's device of using two mirrors. Sunlight was thrown from one of these which was held on the church porch to another which was held near the camera, by which the light was reflected on the pulpit.

The capitals of the pulpit columns are remarkably fine examples of mediæval Corinthian, but they are far surpassed by the capitals of the nave columns. These are an astounding and fairly incomprehensible revelation of the possibilities of Italo-Byzantine art in the twelfth century.

These capitals are here for the first time made known to the world by photographs, and our photographs are believed to be the only ones ever taken of them. Professor Charles Eliot Norton fully agrees with my estimate of them. The single capital published by Schulz is most inadequately rendered and also represents a type less interesting than those of our photographs. I subsequently asked Signor Moscioni how it was that he had made photographs at Troja which neglected these details. His explanation will illustrate the primitive conditions of the town. He said: "The government official under whom we were working could not allow time for us to send to Foggia for timber, and there was no wood at Troja from which we could make a platform on which to raise the camera." He added: "Some



A CAPITAL OF TROJA CATHEDRAL.

people have a swing-back, but we did not happen to have that affair." Mr. McKecknie's camera had a swing-back of such great reach that, with the low platform obtainable, he was able to make the excellent pictures reproduced. We had a similar experience of the inability of the village carpenter to supply us with timber for a platform of the desired height.

Our own great misfortune was of another character. There is no town in Apulia, not even excepting Bari, where photographic plates are obtainable. Troja was our last stopping point on the return to Naples. We had only twelve plates for the whole Cathedral, remaining from the lot originally carried from Naples to Apulia. Only four of these could be alloted to the capitals, and one of these four plates was a failure. Hence the limited number of these details in the illustration.

They are a phenomenal apparation, compared with our best examples of Byzantine art as otherwise known. That they are essentially more beautiful than some of the capitals of S. Vitale, at Ravenna, or than some of those in the vestibule of S. Mark's, need not be dogmatically asserted. That they are wholly unlike these, cannot be denied, and that this unlikeness lies in the character of their approach to classic quality is equally undeniable. On page 284 we have an approach to classic Corinthian which has no extant parallel in mediæval art. The suggestion that this capital has been borrowed from a classic monument, is untenable in view of the Byzantine



A CAPITAL OF
TROJA CATHEDRAL.

quality in the acanthus detail. On page 285 we have a most original and wholly unprecedented variant of a Corinthian form. That the returning spiral scroll at the top of this capital is in principle simply a variant of the Ionic and Composite volutes, and that all are lotus derivatives has been elsewhere demonstrated by the writer. It is barely conceivable, therefore, that this capital may have an unknown classic predecessor in some lost monument. Under any circumstances, the originality of this design is sufficiently apparent. In extant examples of either classic or mediæval art it has no parallel, and the classic tendency of the capital speaks for itself.

The third example p. 286) is a most interesting case of the reaction of the mediæval design on an Italo-Byzantine classic revival. The faun's head is inconceivable in unmixed Byzantine style. it would be inconceivable, for instance, among the capitals of Ravenna or of Sta. Sophia, which represent Byzantine style free from the later Western mediæval reaction, occasionally found in the capitals of St. Mark's. For the grotesque human or animal form is not found in any Byzantine capital, which does not show the mediæval Western influence. Notwithstanding, this grotesque head is treated in a spirit which moves toward the classical and away from the mediæval.

Prof. Charles Eliot Norton wrote me some months ago concerning these details as follows: "These capitals are indeed extraordinary work for the twelfth century. The man who designed the one which is represented in the mounted photograph (page 286) had a genius in which the classical and the mediæval spirit were fused in astonishing combination. I know nothing like it in any of the arts. These capitals ought to be published."

If these capitals were made at Troja, who shall say that the world has nothing to learn and that the history of Italian mediæval art is a finished book? It would be, of course, wholly conceivable that they had been made elsewhere and imported. The records of Amalfi mention that Robert Guiscard caused a number of columns and capitals to be taken from Palermo to Troja. There are, however, no similar details now surviving at Palermo or in Sicily; although it must be confessed that the capitals of Monreale Cathedral are worthy of the best period of the Renaissance.

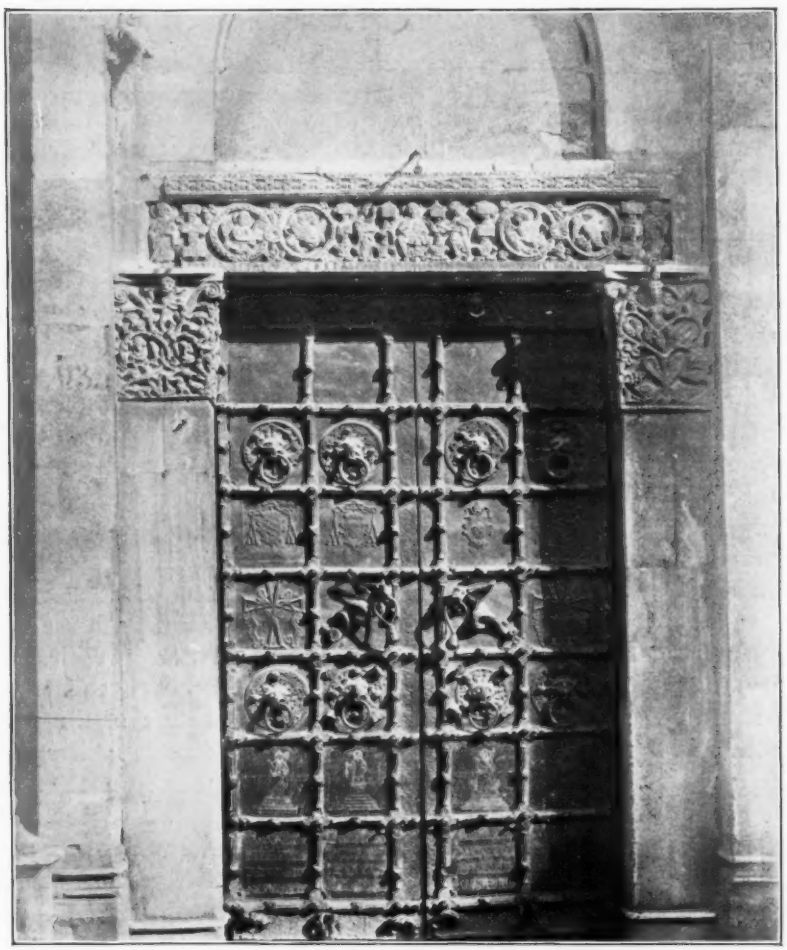
It has to be conceded that there are almost untouched problems in the history of Byzantine art and of the earliest mediæval Italian classical revivals, such as those of Pisa and of Troja. As far as miniatures go, it is already known that there was a Byzantine Renaissance in the eleventh century, producing designs of really classic drawing and composition. The figure sculpture of the two Salerno pulpits precedes Niccola of Pisa's work in the Pisa Baptistery. The candelabrum reliefs of Gaeta and the pulpit sculptures of Sessa Aurunca both antedate the first pulpit of Niccola. The figure designs on the bronze doors of Ravello and of Trani are twelfth century work. None of these works have contemporary equals or rivals in North or Central Italy. All these instances of the precedence of South Italy in the history of art assist one to understand the capitals of Troja, when the historic importance of the town at the given date has been considered.

Moreover, we find at Troja still other phenomenal works of art in the bronze doors of the Cathedral. There are two pair of these. The doors of the south side entrance are shown at page 293. Beside the visible lion heads of fine design, the door panels are decorated with incised figures of bishops of Troja which are not shown by the drawing. The incised lines were originally filled in with silver. These doors, dating 1127, are far surpassed by those of the main entrance (pages 288 and 289), dating 1119.

Both are recorded, by inscriptions on the doors, to be the work of Oderisius of Beneventum, and the figure of the artist is incised on the left upper panel of the main door.

The details of these remarkable bronze doors were well taken by Moscioni, as well as by Mr. McKecknie. The incised figure designs of saints and bishops of Troja which fill the upper row of

panels are not above the average level of the art of the time, and are far inferior to the figure reliefs on the bronze doors of Ravello and of Trani, which date later in the same century. On the other hand, the dragon knockers and the lion heads, all of different



MAIN PORTAL AND BRONZE DOORS, TROJA CATHEDRAL.

designs, are without parallel in mediæval art and experts will agree with me in pronouncing these details as fully equal to the best metal work of the fifteenth century Renaissance.

The left lower panel of the main doors has an inscription recording that Bishop William II. founded them in 1119. From the placing of the doors, as well as from the continuation of the inscription, it would appear that the church must have been nearly finished at that date. The coats-of-arms filling the four panels below the upper line of lion heads are restorations of the sixteenth and seven-



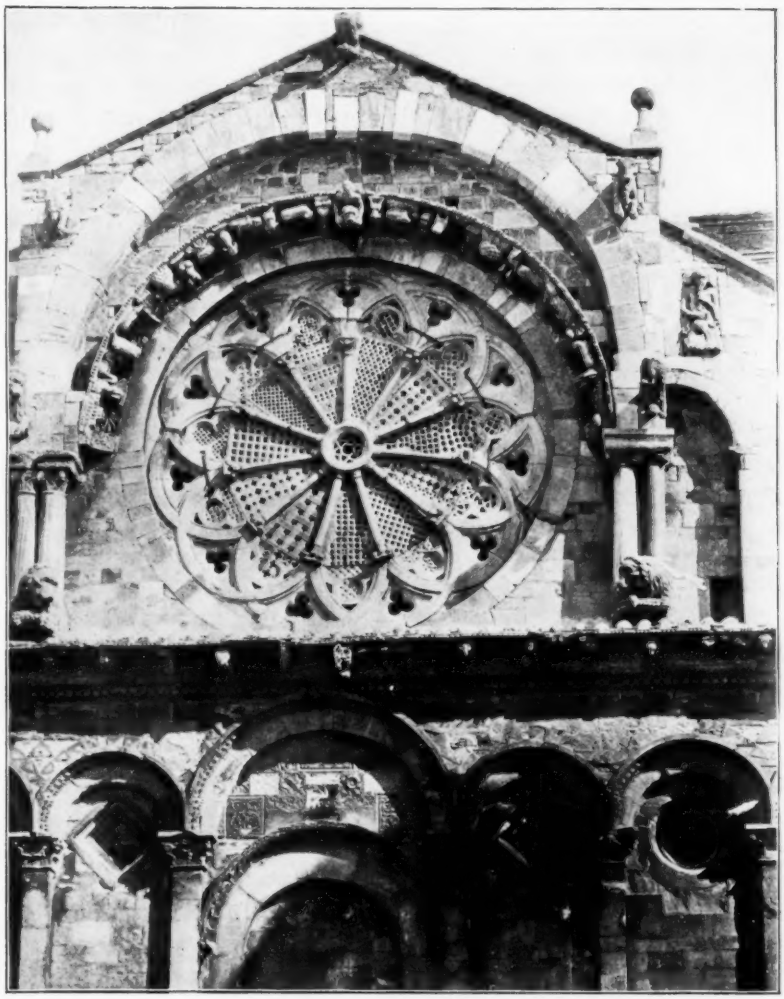
DETAILS OF BRONZE DOORS. TROJA CATHEDRAL.

teenth centuries, as are also the crosses on the two exterior panels next below, and the incised figures next above the lowest panels. The subjects of these last; early saints and bishops of Troja; undoubtedly repeat those which they replaced. Schulz notices that the heads, which I have designated as lions, show a combination of traits taken from the lion, dog and swine. The corresponding heads of the side door are scarcely equal to these.

The rose-window, over the principal entrance (page 291) has no rival in Italy or in Romanesque Byzantine art. The patterns of its screens attract attention as being unlike the usual decorative types, which are known to their period in Italy, and at first glance appear to be Saracenic in quality. The reaction of Saracenic art on the mediæval christian art of Sicily is undeniable, and there are traces of such influence in details at Amalfi and Molfetta. In this case, however, we are probably face to face with the fact that the original elements of Saracenic detail are Byzantine. The closest analogies to the panels of this rose-window are found in the Mohammedan wood-carvings of Cairo, but these are well known to be originally Coptic patterns and originally Coptic work—that is to say, work of the Byzantine art of Egypt. We shall, therefore, suggest that we are here in contact with original Byzantine designs, such as passed from the Byzantine Copts to the Mohammedans, and which have hitherto been familiar to us only in the Saracenic copies. This suggestion is supported by the fact that fragmentary remains of a similar tracery are found in the basilica of Castel St. Elia, south of Viterbo, and that a Saracenic influence can hardly be imagined there.

The effect of this rose-window, and of the exterior in general, is much enhanced by the polychromy of the masonry. The screens of the window are of white marble. The radiating spokes of the wheel are alternately of rose-colored and of white marble. The intersecting arches are alternately of green and white marble, and the triangular spaces made by the intersecting arches are also alternately green and white. The window is framed in a hood consisting of two arches, one above the other, resting on coupled columns with supporting lions. These columns are alternately of rose-colored and white marble. Of the two arches which form the hood, the lower is recessed and composed of blocks, all of which are carved to represent grotesque heads and monsters of all descriptions.

In the clerestory side walls polychromy also prevails. On the south clerestory wall, which has a decoration of projected arcades (page 293), wanting to the north wall, the columns and their bases are yellow, while the masonry of the arches is alternately yellow and green. The inlaid mosaic patterns of the cofferings and of the spaces between and above the arches, best seen on the detail for the façade (page 291), are of green and yellow stone throughout the whole exterior.



UPPER FAÇADE AND ROSE-WINDOW, TROJA CATHEDRAL.

As regards the masonry of the building, we agree with Schulz, who declares it to be *vorzüglich*, or most excellent, but also notice with him a slight deterioration in the masonry of the clerestory as compared with the lower story, which indicates greater haste and a slightly later period of construction. The heavy cornice crowning the lower story rests on consols in the form of grotesque heads. Its projection is unusual, and probably unparalleled, in church architecture. The wings of the upper façade are projecting walls which have no constructive relation to the clerestory (see page 293), but they are needed as buttresses against the thrust of the arches which frame the rose-window. The function of a buttress is indicated by the open

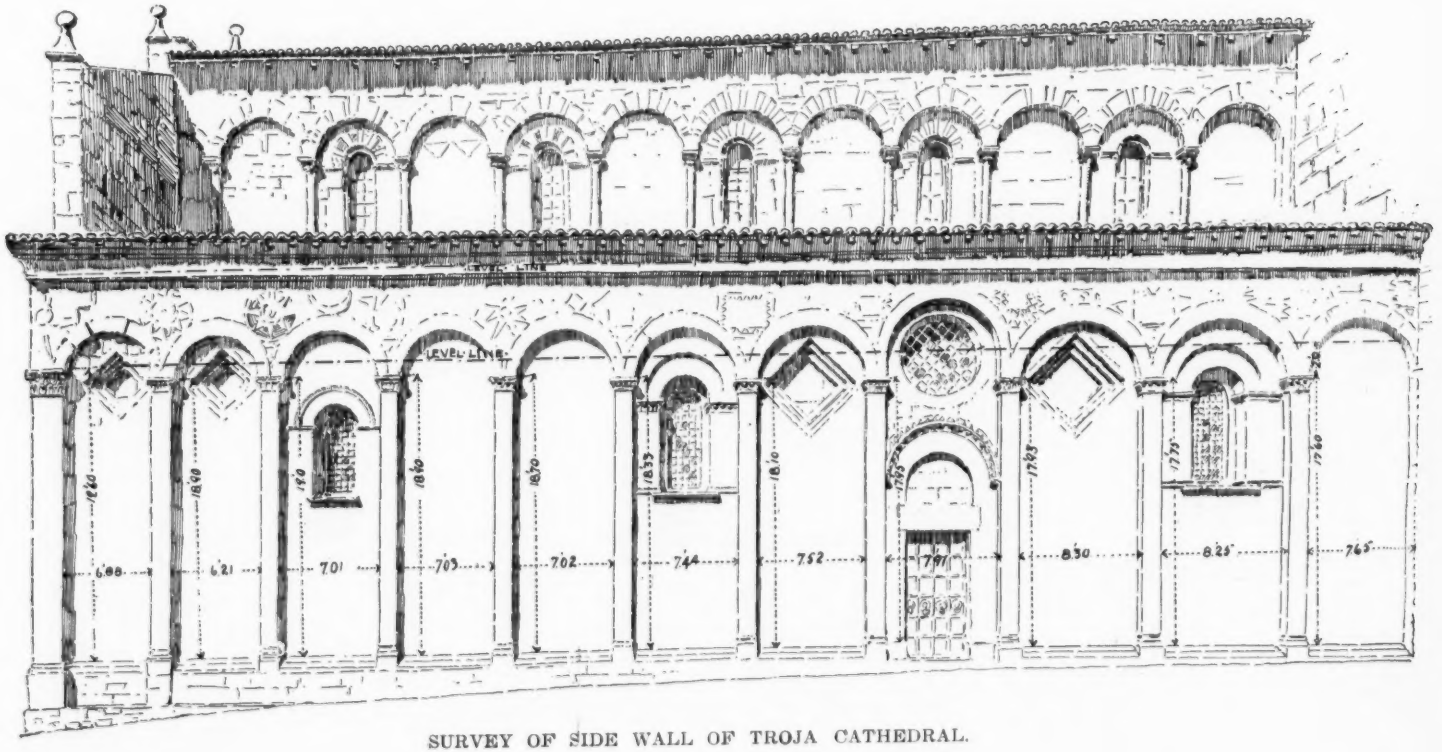
spaces in form of half-arches where the wings join the central façade, and by a slight recession of the wings, as compared with it. The downfall which would have befallen the upper façade without this support is argued by a slight settlement in the crown of the upper arch.

The balls which top the gable apex and the gable offsets are undoubtedly Renaissance additions. The bulls and lions which project from the upper part of the façade remind one of S. Pietro at Toscanella, where a much more profuse use of this system of decoration has been made. The mediæval and semi-barbaric quality of these projected animal forms contrasts curiously with the classical spirit of the lower arcade pilasters, and with the refinement of their detail in capitals (best seen on page 291).

In face of this detail, or of the lower façade (page 280), we are also best aware of the close similarities of masonry details of pilasters and coffering to those of the Pisan Romanesque. Such close resemblances are not usual in Apulia, but they are also found in the ruined Cathedral of Siponto on the Gulf of Manfredonia; in the much defaced Cathedral of Foggia and to a slight extent in the Cathedral of Beneventum.

The most obvious explanation of this Pisan quality would lie in an influence through relations of Pisa to South Italy, which relations are attested by a Pisan settlement at Trani, and possibly by a Pisan trading post at Bovino, near Troja. The date of the Troja Cathedral would not, taken by itself, warrant the contrary hypothesis, that the Pisan Romanesque was derived from Apulia. The Troja Cathedral was begun in 1093. The Pisa Cathedral was begun in 1063, and it is by no means the earliest instance of the peculiar Pisanesque pilaster and coffering style. But general historic conditions and the distinct (though rarely recognized) precedence of South Italy in the revival of sculpture and decorative detail would favor the theory that the traits of the so-called Pisan Romanesque, as found at Troja and Siponto, may have had still earlier examples in South Italy, which have disappeared.

The Cathedral of Ani in Asia Minor dates A. D. 1010, and it has a similar system of pilasters and coffering. In view of this fact, it would be another tenable theory that the Byzantine Orient had given the germs of the so-called Pisan Romanesque both to South Italy and to Tuscany. As a matter of general history, both of civilization and of art, Bari, Salerno and Amalfi, and the towns of Apulia generally, preceded Pisa, just as Pisa preceded Florence, and just as Venice and Genoa preceded Antwerp and Amsterdam. I have been led to the tentative suggestion of a South Italian origin of the Pisan Romanesque by the profound conviction that Niccola of Pisa's ten years' employment in the States of Naples, under Frederick II., had



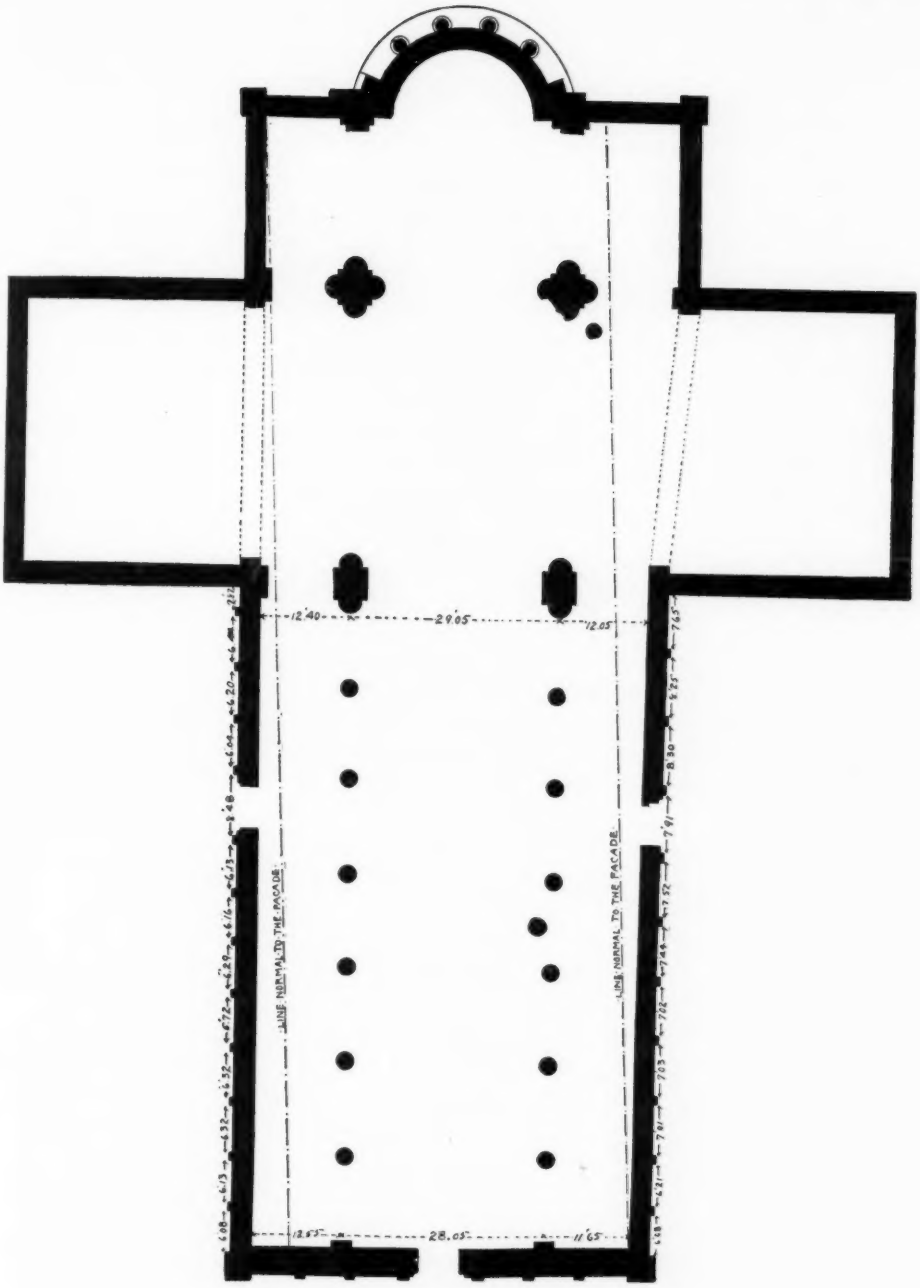
SURVEY OF SIDE WALL OF TROJA CATHEDRAL.

much influence on his artistic training, and by the personal experience that the importance of the monuments of sculpture antedating Niccola in South Italy has not been properly appreciated up to date. The father of Niccola of Pisa is by many authorities supposed to have been a native of Apulia, but both those who have asserted and those who have contested this origin, have laid too much stress on the mere question of birth and too little on the prolonged early residence of Niccola in the South, and far too little stress on the remarkable priority and excellence of the South Italian sculpture. In fact, the acquaintance by personal observation with most of its monuments, and certainly with its most important ones, is still lacking to the majority of archæologists.

Our account of the Cathedral of Troja would be incomplete without some mention of the history and fortunes of the town. As a hill citadel, its importance would clearly lie in the offensive and defensive relation to the mountain defiles leading from Beneventum, from which town it is only twenty-eight miles distant, and Beneventum was the capital and military centre of the Lombard Duchy, which was often engaged in hostilities with the Byzantine authorities of South Italy. Hence we may understand the location of a Greek colony at this point, about the year 1018, by the Greek commander Bubagnanus. In 1059 Troja was added to the South Italian conquests of the Normans under Robert Guiscard, but as a bishopric it was held to be under the immediate authority of the Roman Popes and so continues to this day. A bull of Pope John XIX., claiming this authority and dating 1020, is engraved on a stone which is part of the cathedral walls. Troja continues to figure as an important citadel, and an important town, throughout the centuries of Norman, Hohenstanfen, and Anjou rule. It is mentioned as an important military post during the wars of Alfonso of Naples and Ferdinand of Aragon, but disappears from history after that time. Three Church Councils were held there during the eleventh and twelfth centuries.

The present Cathedral was begun in 1093, by Bishop Gerardus, and was rapidly pushed to completion under Bishop William II. after 1105. The bronze doors were donated by this bishop in 1119 and 1127, as already described. The plan of the church is cruciform, as shown at page 295. The apse is well developed, and although mainly concealed by later buildings, enough of it is visible to illustrate its decorative features.

The entire width of the church is 52 ft. (at the entrance), its length is 157 ft. (interior measures). The side aisles and choir are vaulted. The transept and nave have timber ceiling. The nave has seven bays, with columns of polished granite. These rest on double plinths. The peculiarly low and wide proportions of the under plinths are an unusual feature, and contribute greatly to an appearance of elegance in the interior (page 281).



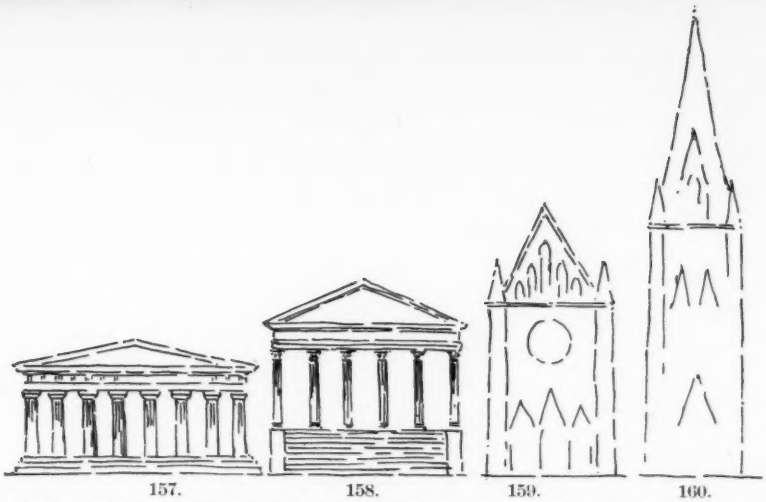
GROUND PLAN OF TROJA CATHEDRAL.

The obliquity of plan, the curious mystification in the arcades of the south wall (page 293), and the drop toward the choir, in the height of the capitals of the nave, have been described in earlier numbers of the Architectual Record.

Those who wish to visit Troja without taxing the hotel accommodations described in the preceding Paper, would do well to avoid the route by Giardinetto, which is suggested by Bædeker. By proper attention to trains one may also avoid the delay caused by stopping at a Foggia hotel. The railway restaurant at Foggia is excellent and offers the best eating to be had in the town. One may hire a carriage at the railway station for the twelve-mile drive, and return directly to that point. Luncheon should be taken from Foggia.

Wm. H. Goodyear.

With two exceptions the photographs reproduced in this article belong to the series of the Brooklyn Institute Survey of Italian Mediæval Buildings.



157. 158. 159. 160.

Progressive raising of the lines of the gable with the lengthening upward of the front.

PRINCIPLES OF ARCHITECTURAL COMPOSITION.*

VIII.

Proportion.**

THE word "proportion" although commonly used somewhat indefinitely, always refers to the size of objects and of parts of objects, and not to their number.

More precisely, the word should be used as in ordinary arithmetical language, not of what arithmeticians call a ratio, that is of the relations between two dimensions of an object, but rather of the relation between two objects, each having two dimensions related to each other in some way. Thus it is rather vague to speak of the proportions of a column, meaning the relation of height to diameter. Apart from precedent, there seems to be no reason why this should not be anything we may wish to make it. If, on the other hand, we ask what should be the height and length of the lintel, if the height and diameter of the column are so-and-so, we have a true question of proportion.

Almost always, too, the question of proportion is discussed entirely as a matter of precedent. Examples of various styles and periods are brought forward, and we are called upon to admire, in one breath, the exquisite proportions of the low Greek pediment, and the very fine proportions of the high Roman pediment, and the noble proportions of the Gothic gable; without any clear perception of why we should admire low, and high, and higher, all at once.

This is the true idea. The Greek temple—the typical Greek temple—was of considerable breadth of façade and moderate height. Be-

*Continued from Vol. VIII., No. 2.

**The following conception of a theory of proportion was suggested to the author by two magazine articles, neither of which is at hand. The first propounded the principle of exact similarity as indicated by diagonals, and applied it to classical façades; the second announced the theory of musical proportion in place of arithmetical, and worked out the dimensions of the triglyphs and other details of the Greek temple, as well as the principal dimensions, in a very interesting manner.

ing cut up, as to its middle and bottom parts, into long and low horizontal slices, the pediment, quite naturally, and as the merest beginner may feel it proper, shared the same character. (157). The Roman type of temple was quite a different matter. The columns were higher, and the width of the colonnade not so great for the height; the whole thing standing on a lofty stylobate, with imposing stair-flights in front. Quite as reasonably, the pediment was made steeper, in sympathy with the general prolongation upward, as at 158.

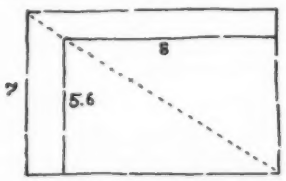
So, when men began to build things higher than they were wide, like a Gothic front, the gable grew likewise, and became itself higher than wide, in effect. (159). Finally, when the rectangular mass below sprouted upward into a tower (160), the pointed part on top stretched upward into a spire. It is as if a Greek temple were drawn on elastic india rubber, and stretched; each part stretches its own share—that is the fundamental idea of proportion.

It is that all parts shall share the same general character—be what geometricians call "similar"; that is, that if one part is seven high and ten wide (161), another part that is only eight wide shall be about, or exactly, five and six-tenths high.

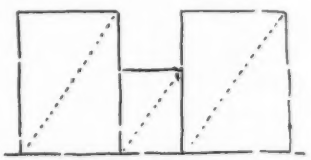
Used in this way architectural proportion becomes equivalent to arithmetical proportion, the dimensions of each part having the same ratio to each other as those of every other part.

There are several reasons why this rule, although sound in its principle, cannot be laid down as a general rule.

In the first place, there are parts of buildings which, from their nature, cannot assimilate their dimensions to those of other parts. A column, for example, must be long and comparatively narrow; the ratio of its width to its height quite different from that of the main dimensions of the building, or from that of the width to the height of the inter-columniation, or of a door, or window opening. So it is also with such things as chimneys, and angle turrets. In 162, for instance, the slender minarets cannot by any means even approximate the square bulk of the mass of the building.



161. Arithmetical proportion of breadth to height, indicated by diagonals.



163. Two masses and a link of similar dimensions.

In the second place there are objects, such as circular windows, of which the ratio of dimensions is fixed.

Beside this, there is the question of the horizontal subdivisions.

which are necessarily of dimensions of different ratios, for the fundamental point in such horizontal bandings, is that they shall have different heights for the width of the façade, which is always the same.

Finally, if it were possible to make all the parts of a building conform to a single arithmetical ratio, the result would be of cast iron stiffness, devoid of the continual variety, which is essential to grace.



162. The proportions of main building and minarets are quite dissimilar.

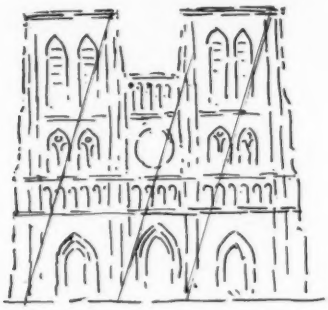
Nevertheless, such variations from the exact dimensions prescribed by rule cannot be formulated; and, in spite of its only partial applicability and other shortcomings, the most practical guide for approximating the proportions of the parts of a building is this rule of similar parts.

The simple drawing of diagonal lines, parallel to each other, is an admirable guide to a satisfactory result, when used with discretion and modified by good taste.

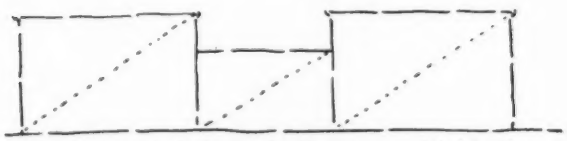
In 163 we have a group of two equal parts, joined by a lower part; the diagonals being parallel, the linking mass is similar, geometrically, to the main masses.

Here is a sketch of a typical church façade, 164, for example, all of which were arranged upon something like this method

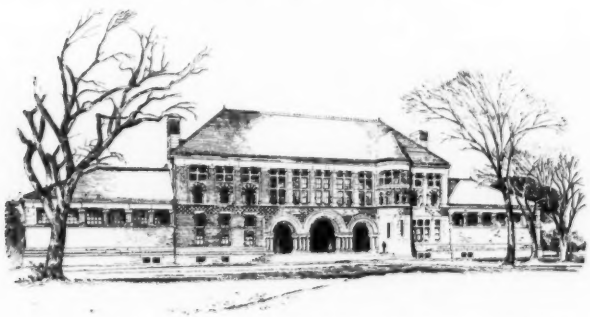
With masses broader than they are high, like 165, the method gives as reasonable an approximation.



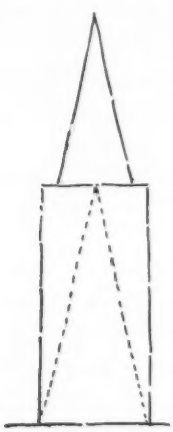
164. Typical proportions of many church fronts.



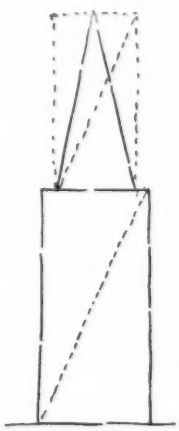
165. Comparatively low and wide masses related to the central link by similarity of dimensions.



166. The Law School, Harvard University, Cambridge, Mass.
The ratios of length to height of mass and appendages are about equal.



167. Arithmetical relation of spire to tower.



168. The same, compared by diagonals.

At 166, again, the relation of the dimensions of the side pavilions is about that of those of the central pavilion.

So, in 167, the result is good in arranging a spire or a tower, 168, being the same thing, illustrating the connection a little more clearly by diagonals than can be shown by the triangles of 167.

An example is given in 169, where the effective angle of the spire,

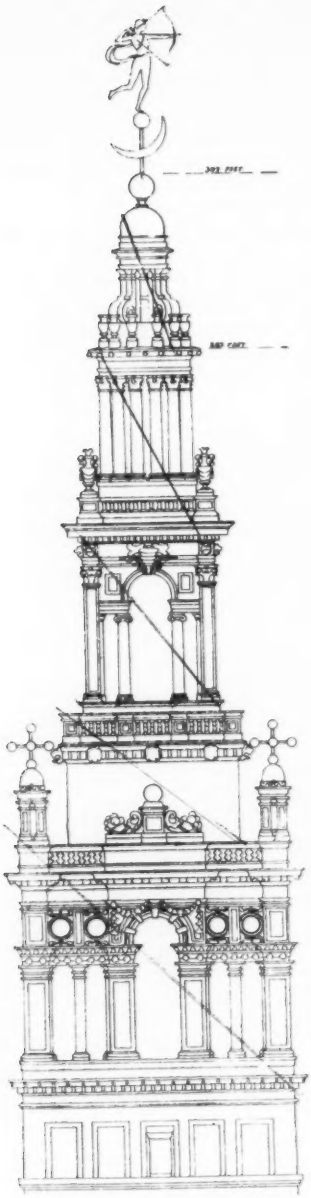


169. Town Hall at Campiègne, France.
Diagonal of tower, from main cornice to base of spire, is nearly parallel with angle of the latter.

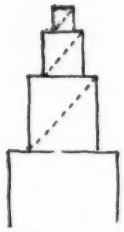
always less in a hipped construction than the elevation shows, nearly approximates the diagonal of the tower.

In 170, the deficiencies of the method are seen. The successive stages of a storied tower, when proportioned by this method, are always wrong; the farther up you go, the more squat they seem. Such stories should be each a little higher than the rule would indicate, as shown in 171. The upper part of the tower of the Madison Square Garden, which well illustrates this prolongation upward of the ascending stories, is shown in 172.

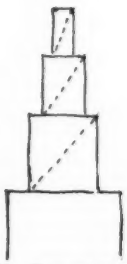
Yet there is no doubt that the rule approaches the truth, the ques-



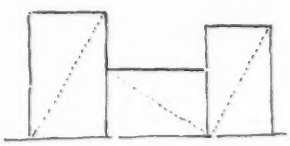
172. Upper part of tower of Madison Square Garden. Each story, above the lowest, is elongated upward beyond the arithmetical ratio.



170. Failure of the method of similar dimensions, as applied to a storied tower.



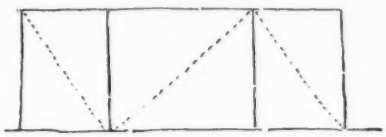
171. Correct method of proportioning a storied tower.



173. Reciprocal relation of masses to link.

tion only is as to the rule for divergencies from it; for which we are compelled, for the present, to trust to the vague faculty called taste.

The rule, moreover, as rules ought to do, works both ways, for horizontal parts in connection with vertical, as well as for horizontal and vertical parts in connection only with each other. In 173, where we have two unequal masses, connected by a low part, the



174. The same where the link is distinguished by retreat in plan.

diagonals are drawn perpendicular to each other, dividing each part into similar triangles, although the middle triangles lie on their sides, instead of standing on their ends.

In 174, again, we have two pavilions, joined by a central mass of equal height, which must be supposed to retreat from the plane



175. Chalêt at Deauville sur Mer.

Shows the reciprocal dimensions of mass and link of mass and appendage, and of link and whole front.

of the pavilions, for proper subordination. The method gives fairly good results in every case.

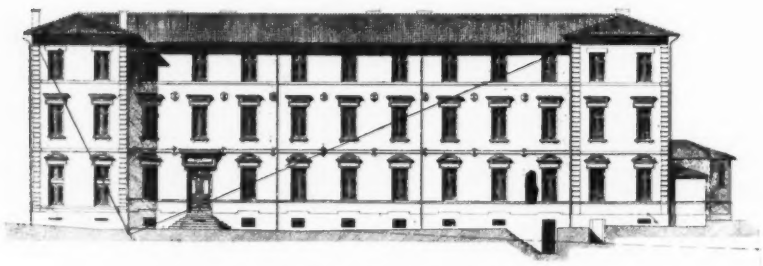
A French country house is shown in 175, wherein such relations obtain. The ratio of height to length of the linking piazza, are about those of width to height of both gables, measured to the chopped-off part, as shown by the diagonals. The ratio of the link

from rail to eaves is almost exactly the same as that of the whole front. Here again, the effective angle of the roof nearly corresponds with the diagonal.

At 176 another French design is shown, in which the relation of the pavilions to the link is a reciprocal arithmetical one, the link being relieved in plan.

At 177 is an excellent example of assimilation of both horizontal and vertical parts, as shown by the diagonal lines.

The method is equally available for the details of a design. If



176. Night Refuge for Poor Women, Marseilles.
The relation of the pavilions to the link is nearly a reciprocal arithmetical ratio.

the doors and windows of a front are made similar rectangles to the front itself, as in 178, it can hardly fail to give a good result.

The Farnese Palace is shown in 179, in which the general dimensions of the windows and of the doorpiece closely approach those of the whole front, with a reciprocal relation.

Valuable suggestions often occur. Over the doorway, in 178, the space seemed too crowded for three windows; two would not look well; neither would a huge horizontal window, as high as the rest, and as broad in proportion as the front of the building is to its height. But, by a lower and narrower rectangle, still similar, the problem is solved; a central semi-circle defining a central portion of the same relative dimensions as all the windows.

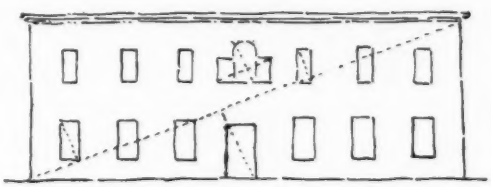
For a tower, too, as in 180, the method suggests, what at once recommends itself to the judgment, that the dimensions of the windows in relation to each other should be about those of the tower itself.

In the matter of cornices, a new light is shed. The usual view is that the projection of a cornice is determined by the height of the building, regardless of its length. At a time when the general dimensions, in relation to each other, of all monumental buildings were much the same, all being on the same columnar model, such a doctrine might be held.

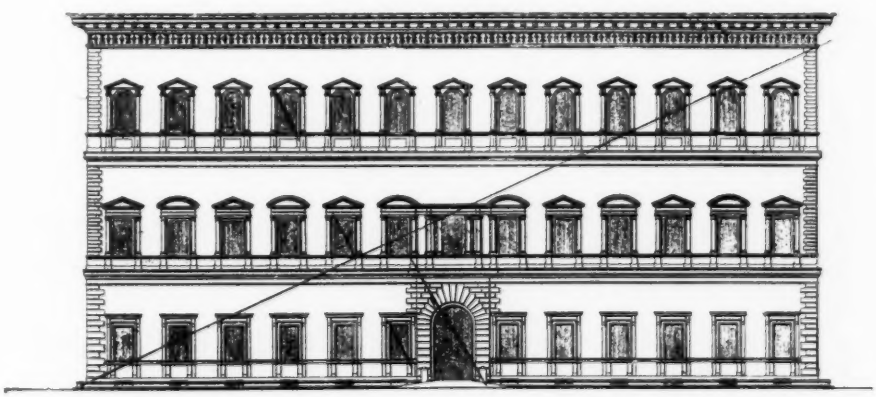
But, carried out on tall and narrow buildings, it leads to such un-



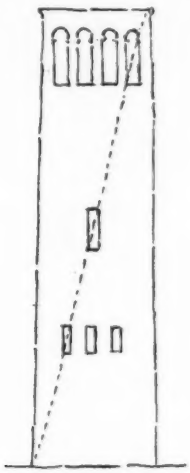
177. Cambridge City Hall.
The front of the tower and of the building, also the central subdivision of each wing, are approximately similar rectangles.



178. The openings are of reciprocally similar dimensions, compared with the whole front.



179. Farnese Palace.
The diagonal lines show the general approximation of door and window forms to that of the whole front.



180. The windows of a tower made narrow and high to correspond with dimensions of whole tower.

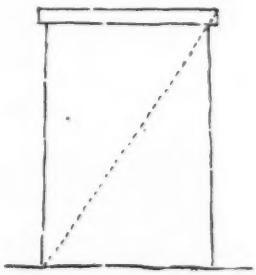
happy endings as this (181), a huge classical cornice poised on top of a mass, of which the dimensions are very much the classical dimensions reversed, stood on end, so to speak. The reasonable thing to do, is to stand the cornice on end too—to make the projection of it to the height of it on the same diagonal as the diagonal of the building (182).



181. Bad effect of cornice of heavy projection on a tall and narrow front.



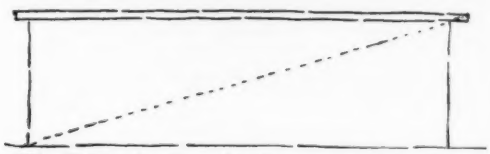
182. The proper cornice for such a front is the high one of slight projection.



183. The same for a building where the height exceeds the width.

Our method thus guides us to the eminently reasonable result, that the height and projection of the cornice should be to each other about as the height and length of the building—a low and wide cornice for a long and low building (184), a high and narrow cornice for a high and narrow building (183).

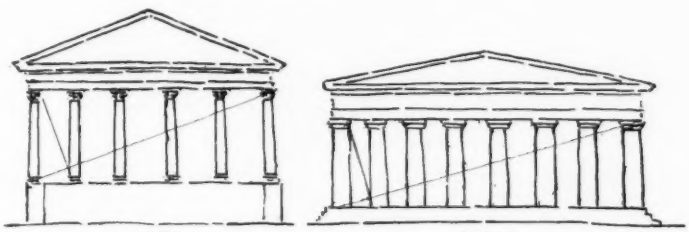
So again, between the short and high rectangle of the Roman front (185), and the comparative wide intercolumniations, there seems to exist some such relation; and a parallel relation between



184. Rectangle of cornice the same as that of front.

the long, low front, and the narrower intercolumniations of the Greek (186).

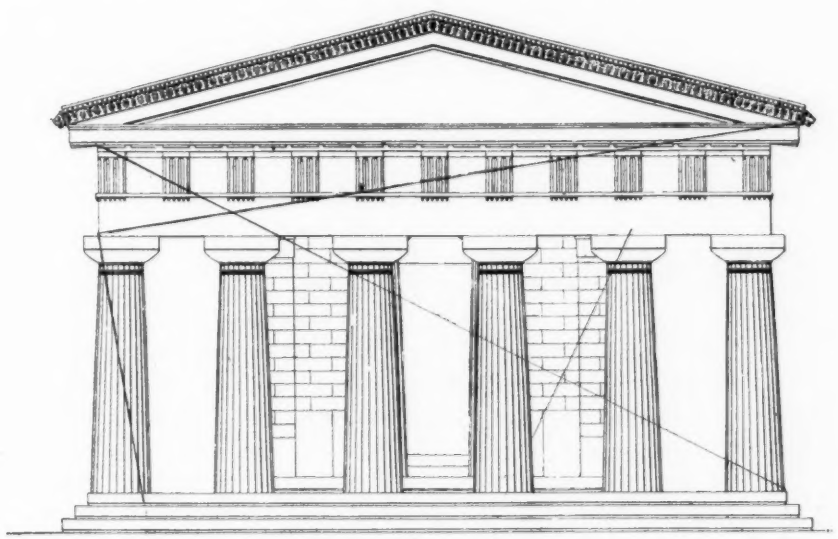
In each case, the general dimensions were assimilated, although perhaps not geometrically similar.



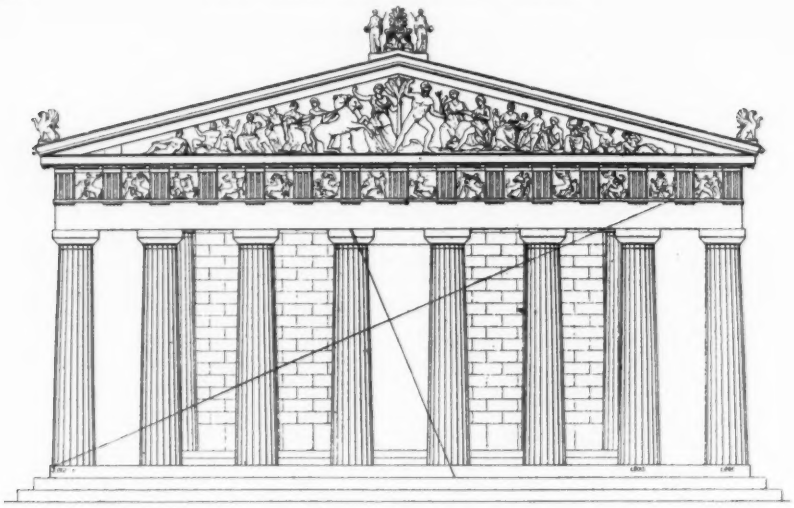
185. 186.

Diagrams suggesting, in an exaggerated manner, the relation of parts to the whole.

The temple of Poseidon, at Pœstum, is shown in 187. The spacing of the columns on centres seems to correspond reciprocally to the dimensions of the front; while the ratio of height to length of entablature is nearly that of diameter to height of column.



187. Temple of Poseidon at Pœstum.
The diagonals indicate the approximate relations between the parts.



188. The Parthenon.

The relation of the general dimensions of the front to the spacing of the columns is shown by the diagonals.

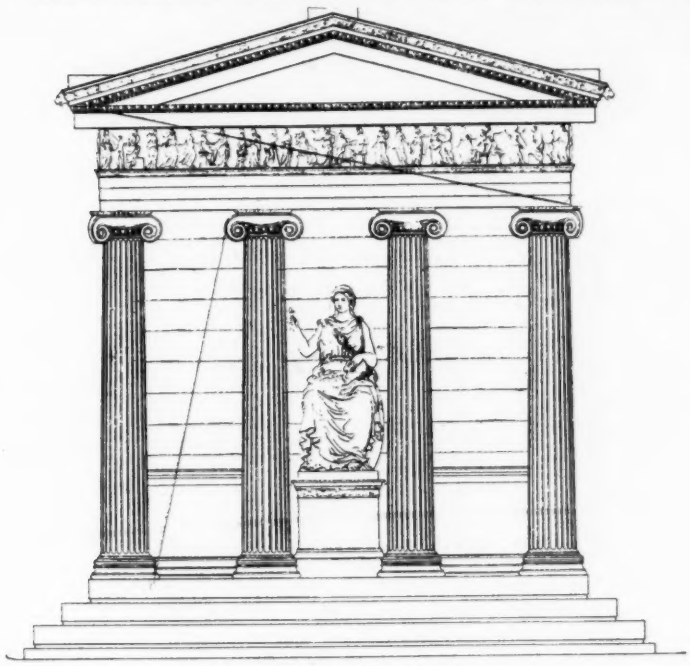
The Parthenon is shown at 188. Here again the centreing of the columns closely matches the rectangle of the front. No other simple relation, however, seems traceable. Although the columns are slimmer than in the Pœstum example, the entablature is even more elongated, so that, whatever relation there may be, it is not that of reciprocal proportion.

Notice, too, how the face of each abacus is an elongated horizontal parallelogram, suggestive of, but not similar to, that of the front. The triglyphs, too, are upright oblongs, more or less like those formed by the centreing of the columns.

At 189 is the front of the Nike Apteros temple, of which the general outline is a square. Here the intercolumniation is nearly similar to the entablature, although this relation is perhaps accidental.

It will be observed that no attempt has been made to show anything like a minute or precise relation in any case that has been quoted. Nothing like precision in such matters is possible, nor even desirable. It is not possible, because in a constructive art like architecture, other than merely theoretical considerations must have some weight accorded to them; and it is not desirable because the excessive formality and stiffness that would be produced by an insistence upon exact similarity of parts, would be fatal to beauty in the completed work.

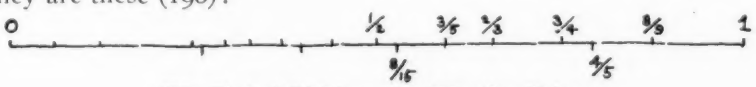
Indeed, the Greek examples shown would indicate what reason would appear to confirm, that some rule is to be desired which would produce general conformity to a certain ratio of dimensions, combined with a continual avoidance of an exact coincidence.



189. Temple of Nike Apteros.
Diagonals show relation of intercolumniation to entablature.

It is possible that the theories of musical intervals, which we know were used by the Greeks in architecture, may have produced this result. As to this use, much has been surmised, but little is positively known. Although in the nature of a speculation, perhaps an attempt at a practical interpretation may not be out of place.

The divisions of the stretched string that produce harmonious musical notes have been known from antiquity for their simplicity. They are these (190):



190. Musical Divisions of a Vibrating String.

If the length of a stretched string be called one, half of it will give the octave above; a quarter, the octave above that; an eighth, and a sixteenth, the octaves still higher up.

Taking any one of these octaves—the first, let us say—from one to one-half, the subdivisions as shown, will give the notes of the gamut: 1-2, 8-15, 3-5, 2-3, 3-4, 4-5, 8-9.

The noticeable character of this succession is that most of the fractions advance by adding one to both numerator and denominator. We have 1-2, 2-3, 3-4, 4-5, and 5-6, although not in the diatonic scale, constitutes the minor sixth. Six-sevenths and 7-8 are wanting—numbers involving 7, 11 and 13 are not found in musical intervals.

Now, the important point about a series formed by adding the same increment to both terms of a fraction, is that the ratio thereby continually approaches unity. We may begin with what fraction we please, and form such a series:

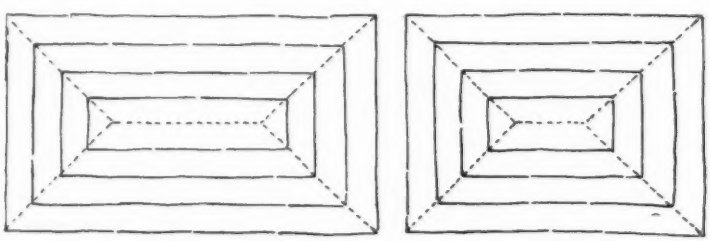
1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9, 9-10, 10-11, 11-12.
1-3, 2-4, 3-5, 4-6, 5-7, 6-8, 7-9, 8-10, 9-11, 10-12, 11-13.
1-4, 2-5, 3-6, 4-7, 5-8, 6-9, 7-10, 8-11, 9-12, 10-13, 11-14.
1-5, 2-6, 3-7, 4-8, 5-9, 6-10, 7-11, 8-12, 9-13, 10-14, 11-15.

Each series approaching unity, as 10-11 is nearer one than 2-3 or 3-4.

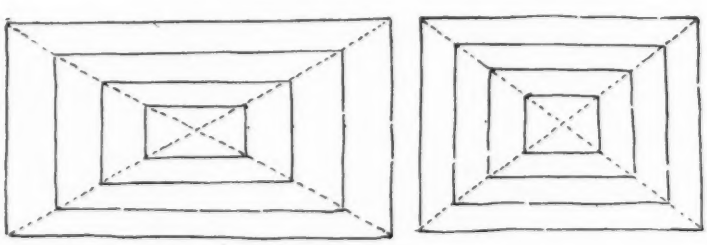
If these ratios be regarded as the sides of rectangles, each series will give us a succession of rectangles less and less elongated—more and more approaching a square, each one nearly similar to its neighbors, the next larger and the next smaller, but totally different from the extremes either way.

To lay out such a series geometrically is simple.

Draw a straight line of a certain length. From the extremities draw diagonals of 45 degrees. Using these as mitre lines surround the line with rectangles at intervals of half a unit. The result is as desired, a series of rectangles of which both dimensions differ from those preceding and those succeeding by a unit; yet all connected by a regular system (191, 192).



191. 192.
Geometrical interpretations of musical ratios.



193. 194.
Geometrical interpretations of arithmetical ratios.

The first described system of perfect similarity is shown in 193 and 194. In this, instead of starting with a line, we start with a point, and draw our diagonals at any angle.

The resulting rectangles are all of the same character, all elongated or all shortened; while in 191 and 192 there is a general similarity with continual variation.

Arithmetically this means a series of ratios related to each other by a different connection than that of equality.

Instead of having 1 : 2 : : 2 : 4 we shall have 1 : 2 : : 2 : 3, the ratio proceeding by addition instead of multiplication. The greater the difference between the first terms of the series that we determine upon as the basis of a design, the more delicate will be the resulting variations. Begin with the ratio 1 : 11, we have this sequence: 2 : 12, 3 : 13, 4 : 14, 5 : 15, 6 : 16, 7 : 17, 8 :18, 9 : 19, 10 : 20, and farther if we please. Now, if the dimensions of our front be 10 : 20, or 1 : 2, our windows, instead of being precisely 1 : 2 may be 9 : 19 or 7 : 17, and our columns may be the first term, 1 : 11.

Just what variation to make in each case we can find no rule to determine; we may only say that some such variation is to be desired.

IX.

Classification of Buildings.

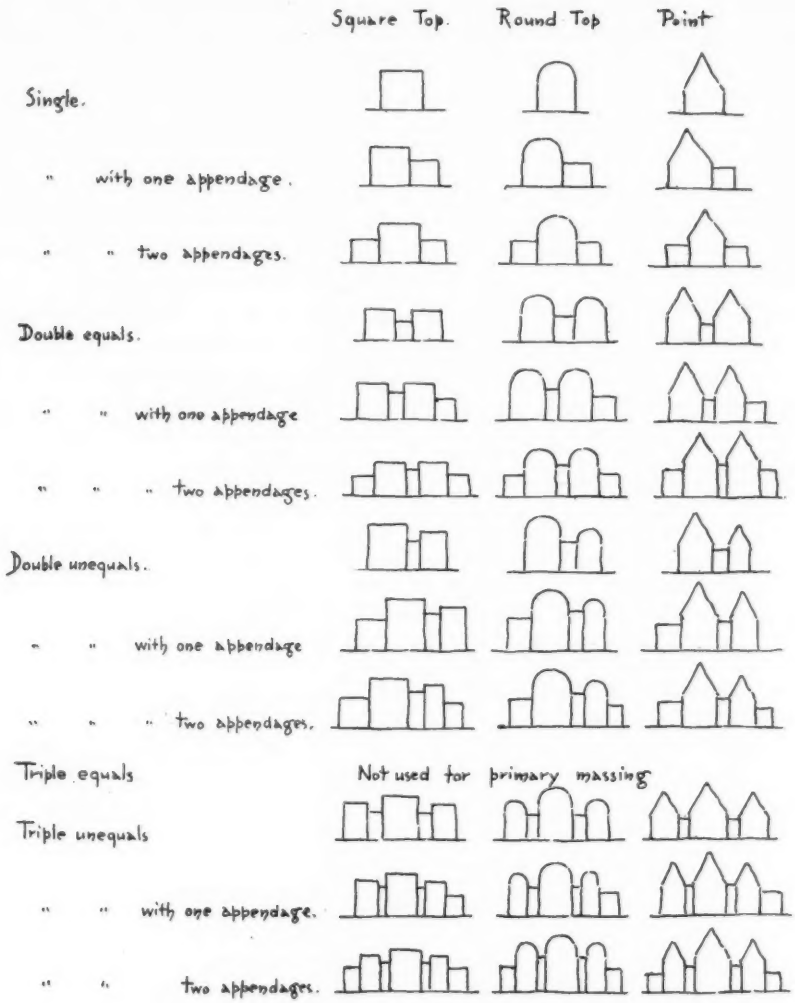
With the aid of the fundamental rules that we have laid down, we are able to classify buildings, according to the disposition of their parts.

Such a classification must be only approximate, and is of service chiefly in helping us to a clear conception of what we are going to do, when we are about to make a design, by setting in order our knowledge of what has been done.

195 is a diagram of classification that will present the facts to the eye, more clearly than words could to the ear. We have divided buildings, roughly, into three classes, square top, round top, and pointed. Under the first head, we may include, not only all undoubtedly square-topped buildings, such as those with cornices, but many whose general effect presents a horizontal sky-line, in which, although there may be gables in certain aspects, the general horizontality is characteristic.

Under the head of pointed top, we must class all spires and pyramidal terminations, as well as all gables, and pavilions tapering by stages to an apex. Mansard roofs are difficult to classify, but they may be placed under the head of square tops or of points, according to the kind of mansard roof in question—square top for the customary mansard of a façade; pointed, for that of a pavilion or bay, or main roof, for that matter, which gives more an impression of a tapering than of a square object.

Round topped main masses, except domes, are rare, but there are



195. Diagram showing classification of buildings.

some round gables, ends of railroad stations perhaps, which would come under this head.

Almost every building of any size or complexity, that stands isolated, or is more than a façade only, must be classified more than once. The first classification is of the building as a whole, conceived as if seen from a distance, in silhouette. After that, each front may be separately classified; and it would be possible to carry out in the same way the classification of the details of each part of each front. In the case of simple buildings, where there is nothing but the arrangement of details to the design, this may well be done; otherwise, it is unnecessary.

For all façade designs, and for a good many that are meant to be

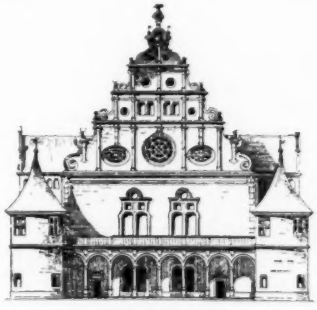
seen from one principal point of view, although something more than mere façades, the first distant, silhoutte classification is superfluous.

If we include all the buildings in existence, we must count a very large number under the first head in the diagram—single, square topped. Of all the vast volume of modern buildings, however, in all the miles of rows of private dwellings—not even to mention tenements; among the solid blocks of portentious stores and offices, in fifty cities of two continents, there is but here and there a rare specimen that even pretends to challenge æsthetic criticism.

Including only those of some artistic pretension, there must still be a considerable proportion of all buildings that we must classify under the first head, as single, square topped masses.

Among buildings meant to be seen from a distance, there are few square topped; most of such are topped with a dome or a spire. Nor are there very many of the square topped so simple as to come under the first head of our classification. The most important are all isolated, corniced buildings, such as many of the larger Italian palaces that are more than façades, as the Palazzo Strozzi, at Florence, and the Farnese, at Rome. This latter ranks as a single mass in the first classification, although in the subsequent classification of the façades, one is composed of double, equal masses.

Next to these are the isolated Greek and Roman temples, and buildings modelled after them, of simple rectangular plan. All of these are classed as square topped, notwithstanding their pediments, although in the classification of each front, the pedimented fronts will be accounted points.



196. Lusthaus at Stuttgart—a single pointed mass.

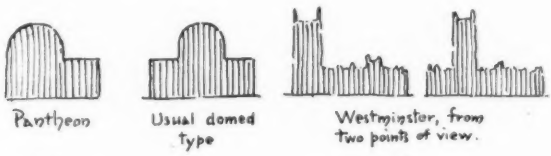
Circular plans, also, like the Castle of St. Angelo, and the tomb of Cæcilia Metella (although the latter once bore a pyramidal termination), we class as single, square tops, and oval plans as well, as the Colosseum, must be included in this class.

Of single round tops, we may instance the Baptistery at Pisa and of pointed tops, here at 196 is an example.

The only round top that occurs at once to the mind which has but one appendage, is the Pantheon, at Rome (197).

Pointed tops with single appendages are many, almost every church with a western spire is to be so classified.

The most frequent type of domed building, such as St. Peter's or St. Paul's, or the Invalides, is to be classified as a round top, with two appendages, the building which constitutes the base appearing thus (198) in silhouette.



197. 198. 199.

Types of Classification.

Westminster Palace is a square top, with one appendage, when the tower is seen at one side; with two, when it shows a part of the basal mass on each side (199). Of a similar double classification is our own Madison Square Garden; but in this case the dominant mass is a point.

Twin objects alone, as the motive of an isolated composition, are infrequent, it being difficult to avoid the condemnation of "double composition"; but with an appendage, namely the whole mass of nave, transepts, and aisles, are the scheme of most of the large French churches, and of the typical Egyptian temples, in which the twin pylons take the place of the twin steeples. Twin steeples are found both as towers, and with spires—the former, the square topped towers, are best for a twin composition. The reason is that a pointed mass is so much individualized by the point, that two such masses cannot be so perfectly welded together into a compound mass as they can when topped by a horizontal line.

A church like Notre Dame, in Paris, is classified in mass as double with one appendage. The front is double simply. Each side is single with one appendage; while the rear, giving the outline of the apse and aisles, is single, with two appendages.

Buildings like St. Mark's, at Venice, and the Taj Mahal, in which a central dome is surrounded by smaller domes, are classified in general, as triple, because, in silhouette, only three domes appear. In classifying each façade, the retiring parts are neglected; in the case of the Taj, the central dome, which leaves each front a double motive.

The Capitol, at Washington, in general classification is a single, round topped mass, with two appendages, these being the whole of



200. Santa Maria Della Salute, Venice.
The domes are of unequal size.

the building below, from whatever point it is viewed. Separately, the principal front is double; the rear is triple; and each end is single.

Of double, unequal, round topped groups, the Salute, at Venice (200), is a good example. 201 is a square topped mass with two symmetrical appendages, although these last differ in detail.

This is a very frequent motive. It appears again in 202, in which the oblique plan does not affect the grouping. The semi-circular bays are subordinated to the main ridge line, and do not



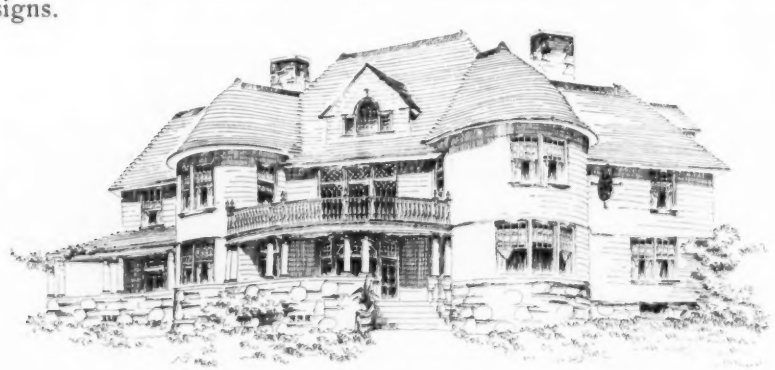
201. A square-topped mass, with two symmetrical appendages.

count in general classification. 203 is nearly the same motive, the appendages being unsymmetrical, and 204 is the same as 201, and is furthermore an instance of very unfortunate lack of proportion between the central mass and the wings.

205 is a double pointed group, and 206 is a triple one.

207 is a group of two unequal points, with a complex appendage at the left, and 208 is a triple group of points, of which the central exceeds the others in size, and differs in treatment, being itself a group of two equal points.

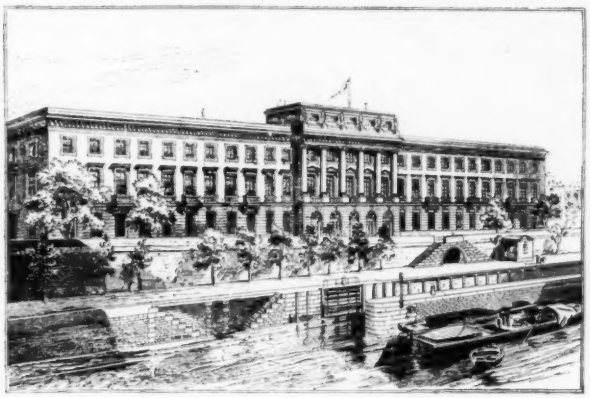
Enough has been said to indicate the general applicability of the system, and to serve as some guide in determining the motive of designs.



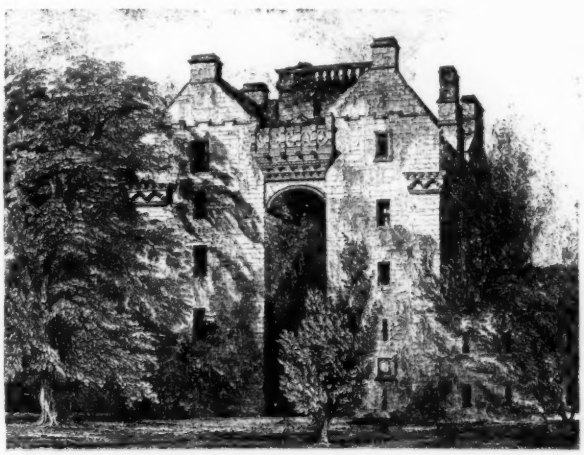
202. Square-topped mass with two symmetrical appendages.



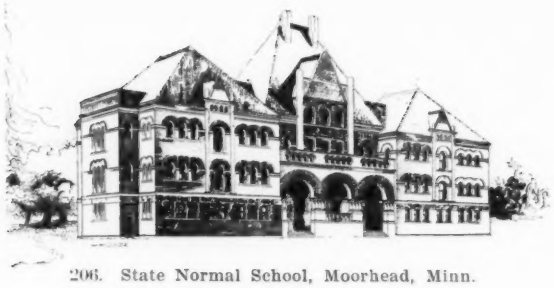
203. Square-topped mass with unsymmetrical appendages.



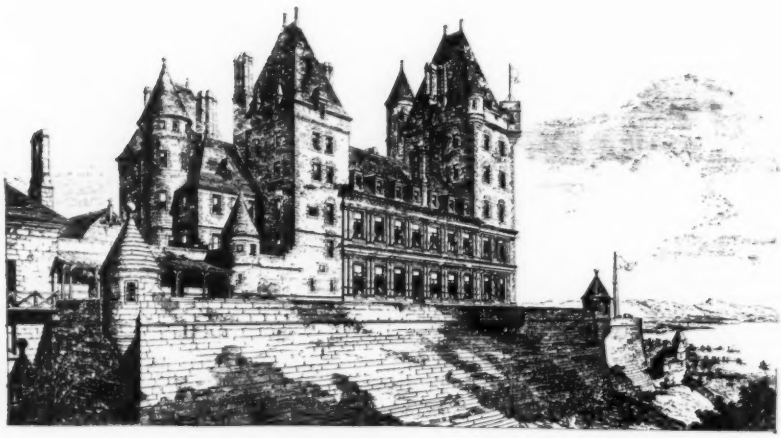
204. The Mint, Paris.
A single square-topped mass with two appendages.



205. Craigston Castle.
A double pointed group.



206. State Normal School, Moorhead, Minn.
A triple group of pointed masses.



207. Chateau St. Louis, Quebec.
Unequal double group, with one appendage.



208. Marine Hospital, Stuttgart.
Triple group of pointed masses, of which the central is a double group.

X.

Practical Examples.

We are now ready to try our hand at making a design by the use of the rules that we have laid down.

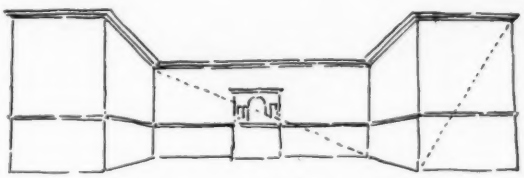
A general conception of the result that we wish to reach must be formed in the very beginning. Even before we think much about the plan, we must make up our mind as to the general character of the exterior that we are about to try to create. And a clear idea of a good motive for an external design is quite as much of an aid in working out a plan, as a good plan is in working out an exterior.

In practice, both go together. The skilful designer knows by experience what plan will work out easily; what will require labor and study.

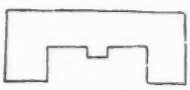
Every designer knows instinctively that a plan like this (209) is always the basis of a good design, in any style. Every designer knows, too, that, if a narrow middle projection must occur (210) it will require extraordinary effort and skill to make it look well, if it must be equal to the wings in height. He will either try to make it only a porch, one or two stories in height, and much lower than the wings, as at 211, or he will try to increase its breadth, as at 212, giving either 213 or 214 externally; that is, making the whole,



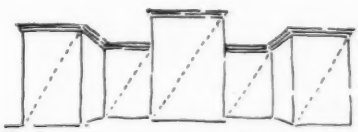
209. An available plan.



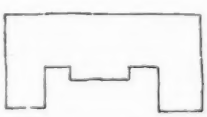
211. Front corresponding to plan at 210.



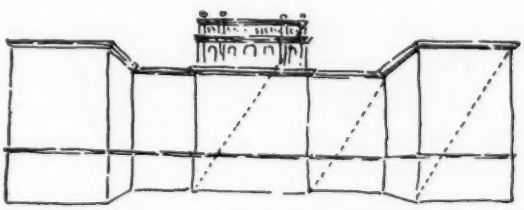
210. The same plan with a narrow central projection.



213. Front corresponding to plan at 212.



212. The same plan with the central projection made wider.



214. Another treatment of front corresponding to plan at 212.

definitely, either a double or a triple group. Instinctively, too, he will keep his central and side members, and the parts between, of somewhat similar dimensions, either all one way, as at 214, or some horizontally and some vertically, as at 211.

Observe, incidentally, that in order to make the central mass of 214 higher, we have been obliged to add an attic treatment; and something of the sort is necessary where the horizontal lines are strongly marked. It is necessary, above all things, in strong horizontal treatment, that the lines be carried all the way through; nothing is more fatal than any infringement of this rule; but the requirements that the central mass shall be larger than the flanking masses, and at the same time, of like character, are, when both are enforced, incompatible with carrying the lines through. To make the masses of similar character, we should have to lift the cornice of the central mass, as at 213, thereby failing to carry our lines through; while, if we carry the lines through, as at 214, we cannot possibly make masses of similar character.

In making the first sketch, there is usually either some favorite treatment in the mind of the designer, to which he tries to bend the exigencies of the plan; or there are certain data, as to the plan, of requirements that must be fulfilled, to which, sometimes only after long struggle, a practicable external design is reconciled.

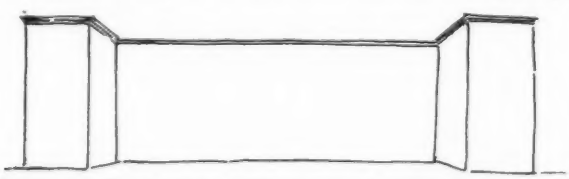
Given, a building to design; the requirements of the plan being



215. Plan required by the exigencies of a certain problem.

like 215, a front of 200 feet, with two pavilions each of 25 feet frontage, and 40 feet projection.

It is a difficult matter to handle this, on account of the narrowness of the side masses, compared with the magnitude of the central link. Any direct carrying out of the plan, with a straight cornice, would mean something like 216—an anomalous group, the side



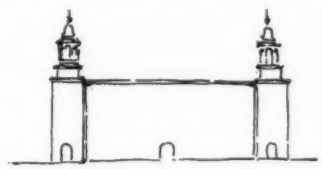
216. Front corresponding to plan at 215, showing the difficult proportions resulting.

masses being too small in proportion to the connecting part for it to be reckoned a double group; and too large in proportion to it, for the central part to seem a single mass, with the side masses mere bounding turrets.

If we could do anything to accentuate either the central part or the side parts, we could solve the problem.

First, we wrestle with the plan; and try to find some way of widening the side masses, not at the expense of the plan, but so as to improve that as well. Often, indeed, such careful study discovers some unthought-of and welcome idea, that makes a plan, before only passable, very much more to our taste, and at the same time makes a good external design easily attainable.

In this case, however, we wrestle in vain; no enlargement of the wings is possible. Next, we try to reduce the projection of the wings, having in mind something like 217, with an idea that we

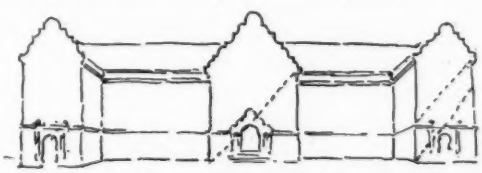


217. Showing what might be done with 215 if the projection of the flanking masses could be reduced.

can put an entrance for each tower, and one in the centre, quite appropriately for our purpose.

Here, again, we fail; the wings must stay as they are.

Finally, we relinquish our attempt at a double motive, and manage a projection in the centre, less in depth than the wings, but of greater width, and determine to use a triple motive (218).



218. Ultimate treatment reached for plan 215.

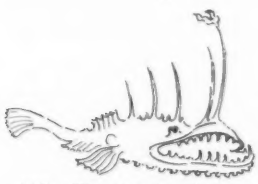
Partly because it would not do to spend money upon useless erections of towers and things on top, partly because we think it really looks better, we determine to make the three objects gables, and not towers, with as steep roofs as we dare, so that we may not lose too much room.

With all our efforts, we cannot make our gables of at all similar dimensions. What we should like to do, would be to lower the side gables to about the point where the diagonal strikes; and it would manifestly improve the design if this were done.

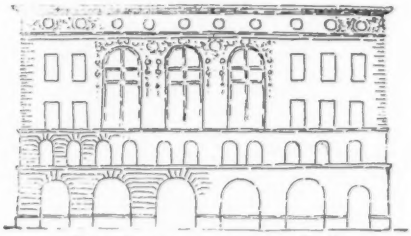
But it may not be; space is of vital moment, and to cut down the height of the wings is not to be though of. We manage, however, to run a light string course above the first story; which leaves the part of the side gables above it somewhat similar in dimensions to

the whole of the central one. Although far from what we should like it to be, we let the design go, as about the best that can be done, under the cast iron conditions of plan; adding only the necessary three doorways, and the windows, which are determined more by the need for as much light as possible, than by any considerations of appearance.

Almost all designs have to be executed in a partially developed, incomplete and unsatisfactory condition. The skill of the designer is exhibited in his aptitude for reconciling practical requirements with the demands of beauty; yet the former may be so stringent that genius itself cannot relax them nor adapt the design to them. It is futile to urge that practical requirements fulfilled constitute beauty; for not even in nature is this true. The practical requirements that have produced the Gila monster, the horned toad, and the sea-devil (219), have certainly not produced beautiful results.



219. The Sea Devil, illustrating the incompatibility in some cases of beauty and utility.



220. Design for a Town Hall.

Taking another problem, let us suppose a town hall, of which the plan is limited to the usual rectangle. We may adopt either a horizontal treatment, with a flat roof; or a vertical treatment with a pitched roof; let us take the former; (220).

The hall proper is to be a large room, two stories high, and in the upper part of the building, being used but rarely; this prevents us from placing our three large windows as the middle horizontal division. The main stairs is at the rear, immediately opposite the doorway, and, after reaching the floor of the hall, quite naturally divides into two flights, one to each portion on each side of the hall. These, nevertheless, are unavoidably unsymmetrical; not altogether to our regret, as assymmetry is not always offensive; often interesting rather.

The lower part must be designed with continuity of treatment, as we should have preferred to treat the upper part too, had not the two-story central hall almost forced upon us a single central motive.

We will, therefore, space the openings as nearly equidistant as possible, and make them all of as nearly the same width as may be, remembering that slight variations are not easily detected by the eye.

Under the central large window we put a couplet, which is unavoidably wider, as a whole, than the large window above.

This forces the couplets under the two large windows on each side of the central still more off centres, yet we still manage to retain continuous vertical lines of pier. Two more openings on one side, and three on the other, come pretty nearly under the windows above. The effect of the incomplete coincidence is to attract the eye rather to the horizontality of the band of windows, than to the verticality of the uncentred piers between, which is precisely what we expected to do.

Our first tier of openings gives us more trouble. The doorway must come under the central large window, which is fortunate, and we determine to put an arch on each side, of not quite, but nearly, the same size as the doorway itself.

On each side of this, the space baffles us. There is room for about half an arch, only, on one side, the dexter, and an arch and a half, scant, on the sinister. On the latter, we finally put one more arch of like size with the others, and another much smaller, which we arrange to serve as a special private doorway that we had desired; while on the other side, we put one not so small as this postern, and not so large as the row of large arches.

Although we should have preferred a row of more nearly equal arches, that which we have worked out looks fairly well.

The arches, we have made all of about the same height; the doorway arch two inches higher, and five inches wider than the others alongside of it; the extreme dexter arch three inches lower, simply because it is unavoidably so narrow; the postern, sixteen inches lower, for the same reason. Yet with even as much variation in width and height as this, the first impression to a spectator approaching from any direction, except directly in front, would be that of a row of equal arches.

In the same way, we make the large, central, two-storied arch four inches wider and two inches higher than the others, a difference only distinguishable by the most minute observation, yet having a wonderful effect on the feeling of the whole front.

Although we have secured a triple horizontal division, our largest part is at the top, and not in the middle, as we should have preferred it to be. We must, accordingly, do all that we can to divide the whole front into two parts, throwing together the two lower by sameness of treatment. Rustication, we determine upon, executed in brick, the only available material.

Fortunately we are able to procure a soft-brown brick and we make the enriched parts of terra-cotta matching in color.

The cornice we make as small as we dare; with its profile upon a diagonal of the whole front, and its height increased by an enriched band under it, with bull's-eyes that serve as outlets for our ventilation system.

In originating a design, the requirements of utility will usually guide us in the choice of a motive. Once chosen, the important thing is to carry it out completely, and not bungle it with features that contradict the leading idea with which we began. Should it prove impracticable, it must be relinquished, and a different motive adopted.

Let us suppose that a design is required for a large country house. The owner is a man of wealth, having no occupation. His tastes are for hunting, shooting and other out-of-door sports, and he entertains a good deal. The situation is to be in a flat country, not far from the ocean, with not many trees, and such as there are, low and scanty.

The first hazy glimmer of an idea that comes to us is that we have long had a desire to make a large, low tower, like that which distinguishes Windsor Castle, the keynote of a design.

This is our opportunity: why not take something of the sort here and use it, internally, as a large dining-room, perhaps forty feet across and two stories high, round or octagonal?

The next idea is that such a house would require a ball-room at least as large as the dining-room. Why not, then, take these two towers, make each of them octagonal, and fit the rest of the house to them? Something of this sort is what we first sketch (221).



221. First conception of a motive for a large county house.

Well enough, so far. Our two big rooms can be made very magnificent; and, in the link between, we can put all the libraries, breakfast rooms, drawing-rooms, and, in the second story, bedrooms, dressing-rooms, boudoirs and suites, that we may need.

Still it looks crude and unfinished. Stiff, too, those great, square-shouldered masses; yet they are too good in themselves to give up just yet.

So we add, on each side, a very much smaller mass, keeping the oblongs of both roofs and walls of about the same character as those of the main building. One of the appendages must be appropriated to the kitchens, and the other we may use for the more retired parlors and music-room of the ladies of the family.

Then, coming diagonally out into the foreground, another appendage for the billiard-room, smoking-room, and gun-room of the men, and our design is much improved (222).

It is really nothing but two very large, equal masses; so large that

almost any number of smaller things can be placed around them; and, indeed, requiring irregularity in the setting to counteract the excessively formal character of the motive.

Therefore we deliberately put the entrance porch on one side of the centre, and a big dormer not quite the same distance the other side of the centre. The openings in the central link we dispose in a continuous row, entirely avoiding any break in the connecting lines. We expect to have some trouble with the chimneys, as they must

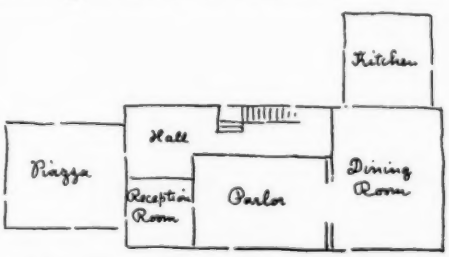


222. Completed Design of Country House Sketched at 221.

be kept as low as we dare to make them; the design would be better with none at all.

Let us take another house, of quite an opposite character.

The cost is limited to four thousand dollars. The lot is irregular, and shaped so that we must place the broadest side toward the street. The special requirements are that there shall be a small reception room on the first story, and that one of the bedrooms shall have a small room attached to it, as a study. The piazza must be at the side, as the house fronts north, and the summer breeze is from the south; and something of this kind, in plan, is the first result (223).

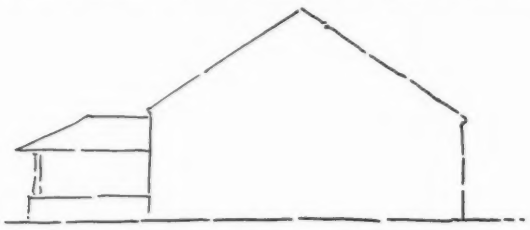


223. Conditions of plan for a small country house.

As for the exterior, we are quite at sea. Either a gabled roof, or a hipped roof it must be; it is too narrow for a gable at the side; a hipped roof will leave no space for a servant's room; there is noth-

ing for it but a gable facing the front, not at all a bad motive to begin with; but not very beautiful yet (224).

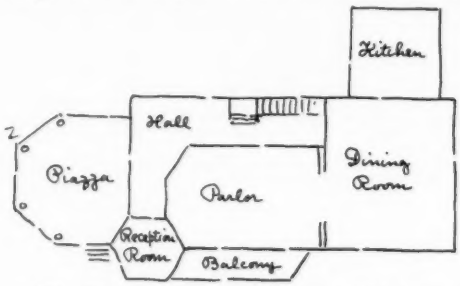
As we cast about for an idea, it occurs to us that the reception-room is far from satisfactory. Could we not put it, we ask ourselves,



224. Conditions of elevation resulting.

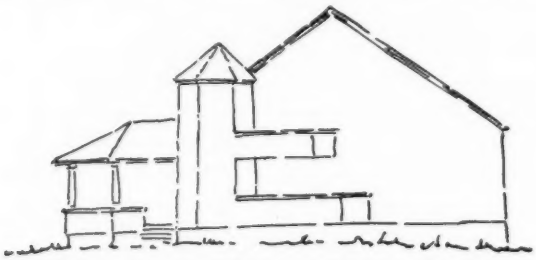
outside the rectangle of the plan, and make a single feature of it, which, as we have said, may be placed upon any part of a mass, and make a harmony.

Accordingly, we overhaul our plans thus (225), put our reception-room, and it just strikes us, the study in the second story over it, in an octagonal turret, attached to the main gable.

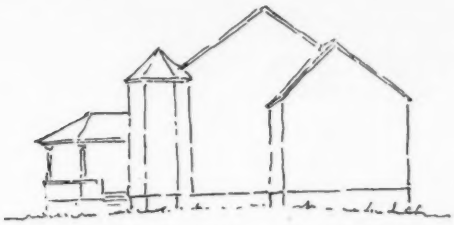


225. The same plan as 224, so modified as to obtain a single subordinate mass in elevation.

The result is good, as long as the large gable is higher than the turret (226). To raise the latter would make a group of two equal and unlike objects; to add a smaller gable, as shown in 227, would make a group of two subordinate unlike objects; either of which combinations does not look well. If we wanted to add another turret we might do



226. Elevation resulting from 226. The balconies are details, serving to connect the subordinate tower mass with the chief mass.



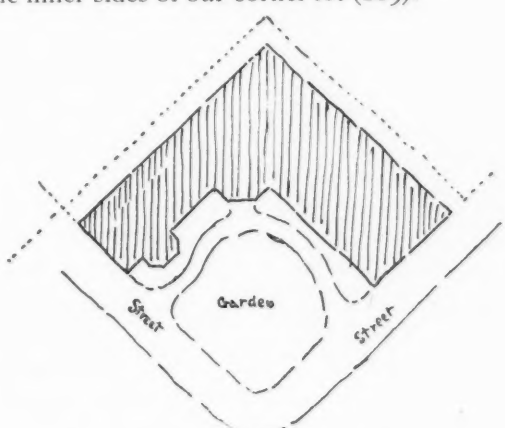
227. Unfortunate effect of a second and different subordinate mass.



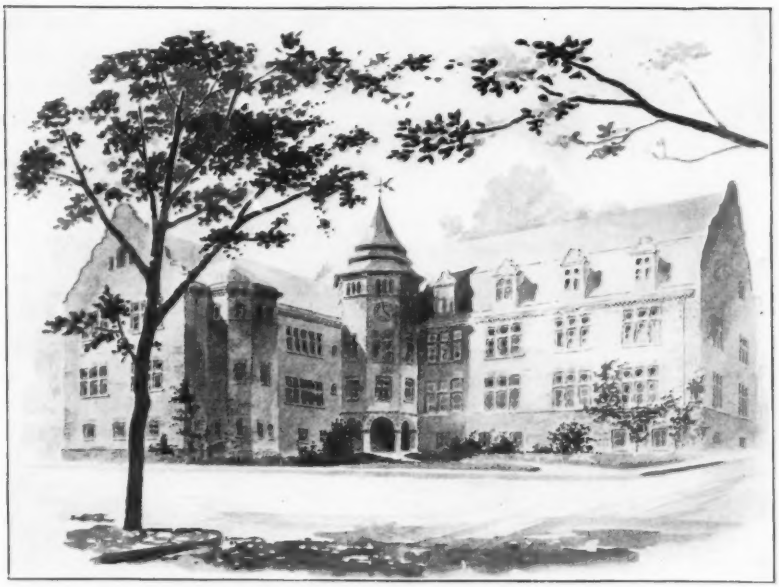
228. Small country house, a single mass, with one subordinate mass and one appendage.

so; but it is better to preserve the original motive, a single mass, with one subordinate mass, the tower, and one appendage, the piazza. 228 is a photograph of the building as completed.

The next example we take may be that of a school in a rural town. The plan, after much study, we conclude to make two sides of a quadrangle, on the inner sides of our corner lot (229).



229. Block plan of school building.



230. Design for Country School.

A single mass with a subordinate mass—the turret—and an appendage, the wing on the left. This appendage itself has a subordinate mass, resembling the turret in its octagonal plan.

One of these parts is naturally larger than the other; and it remains only for us to join them by a low turret, in the angle, to obtain a most effective arrangement (230).

At the same moment, it occurs to us that this turret will be just the place for the main entrance; and that over it, on the second story, will be a convenient situation for the principal's room, commanding outside a full view of the garden, and inside of both corridors.

The motive is a single mass, the larger block, with a subordinate mass, the turret, and an appendage, the smaller mass; the same grouping, in fact, as the small country house just described. This use of towers and turrets in re-entrant angles is always capable of being made effective. The essential point to be observed is that the tower must be lower and smaller—much smaller—than the chief mass.

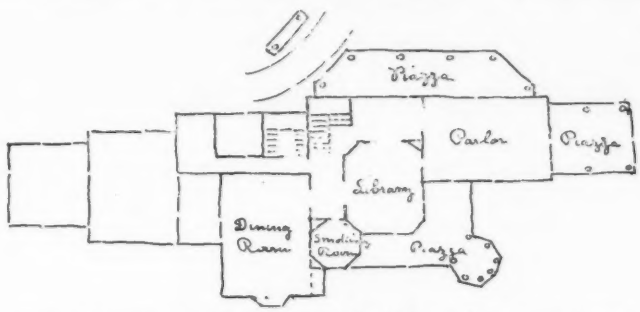
Let us take another example of a house of moderate size, since such constitute so large a part of a modern architect's field.

The problem, in this case, is complex. The site is the top of an open hill, with a fine mountain view on the south and west, which the owner wishes to command from as many of the rooms as possible. On the east are woods and rocks, and on the north a potato patch, belonging to somebody else. This last is, by all means, the place for the kitchens; all of the three remaining sides should be available frontage for family rooms.

The requirement that most of the rooms should command the view, leads us, finally, to a plan of rooms, en echelon, as it were, thus, (231), the long side being the principal front, and the entrance being on the opposite front.

The plan does not look promising for a design. Moreover, it is a most unscholarly plan, having no axes to speak of; yet there are some good diagonal vistas inside, and everywhere a glimpse of the beautiful out-of-doors.

As for treatment, we recur to the useful double group (232), making one large gable, and one somewhat smaller, the larger with a low turret, as a subordinate mass, very much as in the school design; except that here the individuality of the gables forbids us to regard one as the appendage of the other, and causes us to class them as two unequal members. On each side, however, we have a compound

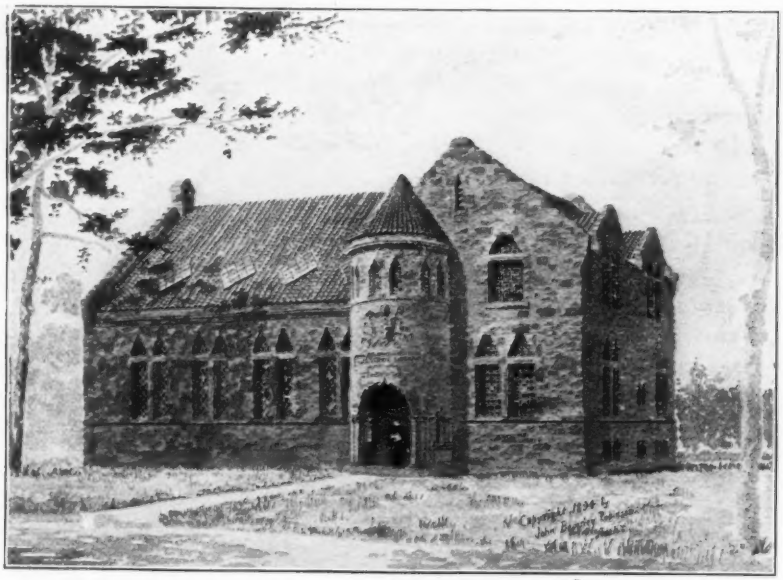


231. Plan of house arranged to command double view from every room.

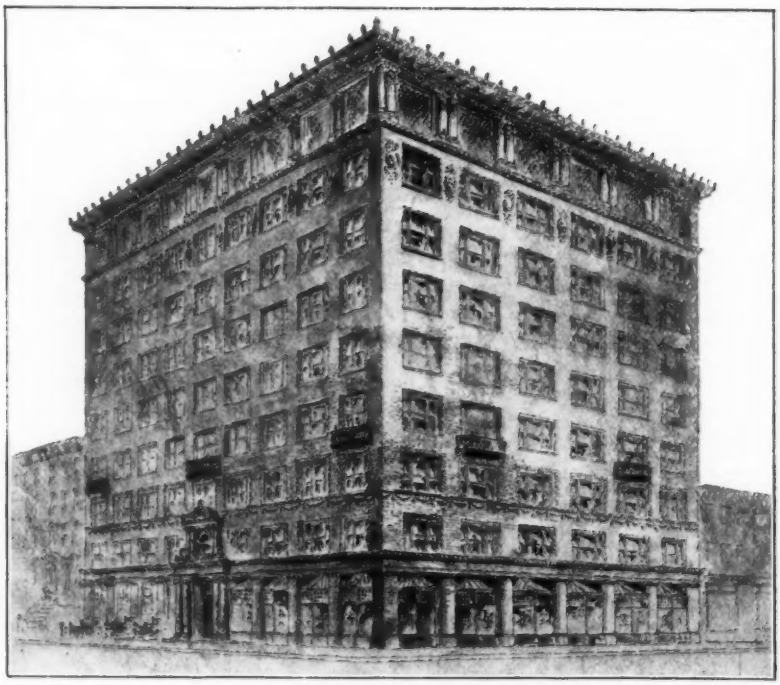


232. Design for Country House.

Two unequal masses—the main gables, with two unequal compound appendages. The turret is a subordinate mass upon the main gable.



233. Design for Small Library.
A single mass, the gable, with a subordinate mass, the turret, and an appendage—the whole portion to the left.



234. A City Building.
The fronts are subdivided into three parts longitudinally, and the openings in general dimensions are similar to the façade.

appendage, which, with a little, anomalous, octagonal pavilion in the foreground, complete the design. The two gables are, of course, similar; and all the rectangles, in both stories, have some relation of approximate similarity.

Let us now try our hand at a small library, belonging to a modest educational institution.

It is the wish of the management that class-rooms, in two stories, and two in each story, shall be attached to the library; and that the latter shall be somewhat monumental in character, directly communicating with the class-rooms, and also provided with an entrance for outsiders from the street.

The parts are as shown (233) almost similar, and the composition, as a whole, is a main mass—the gable—with an appendage, the library, and a turret again as a subordinate mass. The appendage is larger than is desirable, but this seems unavoidable. Notice the suggestion of the outline of the turret in each window of the appendage.

The next problem is a block of city stores, with apartments above, quite the usual thing in cities (234).

Our plan is unimportant; being determined by light courts, sizes of rooms, spacing of iron columns, and such considerations. The important thing is that the whole lot must be covered, the building must be eight stories high, and the top story is to be used for studios.

This last condition gives us a clew to the treatment.

We divide our fronts, for it is on a corner, into three parts horizontally. The lower one comprises the stores, and the story over them; the upper one is the studio story. Both we arrange with columns, the lower stout and plain, determined more by constructive than æsthetic propriety; the upper, slim and rich, and crowned with a moderate, terra-cotta cornice. In between, we keep it all plain; carry up the piers unbroken; an intermediate horizontal line would be fatal here; we venture only to hang a few garlands, like a fringe, below the upper story, making them, in effect, a part of it; and to put a few light, iron balconies, taking care that they shall not form a marked horizontal line.

This is all that we can do. The heights of stories determine our subdivisions for us; and no thoughts of similar or dissimilar rectangles may be entertained. Only, we have been able to group the windows in triplets, each group approximating the squareness of the façade in its general dimensions.

John Beverley Robinson.

PALLADIO.*

PALLADIO was, then, both a literary man and an architect, and that can be accounted for either by studying the times in which he lived or the scenes amid which he received his education and his art.

The sixteenth century in Italy is the century of erudition. Renouncing the Middle Ages, the epoch of the humanists was devoted to the literary and artistic monuments of Greece and Rome, and Jeangeorge Trissino, the patron of Palladio, contributed to the appreciation of the Greek and Roman masterpieces, both as poet and lover of architecture.

An historian of authority remarked on this point that Trissino occupied himself in writing one of his most famous poems, "Italia Liberata," to demonstrate at one and the same time not only his familiarity with the military art of the ancients, but his knowledge of building as well.

Having said this much, it is evident the influence of Trissino upon Palladio must have been both profound and continuous. Author and architect was Trissino. Author and architect was Palladio. Besides, during the sixteenth century it was almost impossible for an artist to be ignorant of the literature of his time. During the Renaissance, Italy had a school of accomplished artists who could handle the pen as well as the tools of their craft, and who were sometimes authors of technical and historical works. These literary artists appeared before Palladio's time and occupied themselves with the same themes and ideas as did those of whom we are now speaking. Didactic works at this time were invariably compiled by artists: Ghiberti, Alberti, the Filarete, Pietro della Francesca, Leonardo, Cesare Cesariano. The exceptions are only seeming, and at this time when literature was servile, architecture followed in its wake, in such a manner that in our art, inspiration was replaced by erudition, and every architect became what many artists at this time were, viz.: writers as well as architects, and this Palladio was in an eminent degree.

Thus, in the time to which we refer, it was indispensable for everyone, i. e., for those who were interested in letters, to understand Latin, and as Latin architecture (or as some called it Greco-Latin) was the architecture that one had to study, the language became the principal vulgariser of this very architecture.

I have mentioned Vitruvius, and since Palladio speaks of him as

*See Vol. VII., No. 3, Architectural Record, for Part I. of this article.



ANTICA PORTA, VICENZA.

"our great Vitruvius," one can easily understand why he made him his favorite author. Thus arose the necessity of understanding the language, and even the Vitruvian text, which contained in the translations many paraphrases more or less free before Palladio interested himself therein. Examples are to be found in Fra Giocondo (1511), Cesare Cesariano (1521), Caporali (1536), and in fanatics such as Fra Pacioli, in whom the Vitruvian enthusiasm reached its utmost limits. This fanatical priest thundered against those who called themselves architects without having seen the binding, even, of a copy of that great theorist, "delo excellentissimo volume del nostro degnissimo Architecto e gran Mathematico, Vitruvio."

Thus Palladio chose Vitruvius for his guide (see the preface to the first book of "Architectura"), but he manifested nothing of the intolerance of Pacioli. On the contrary, upon the study of monuments he modified the Vitruvian precepts, here and there, whenever he considered it advantageous. Like his eminent predecessors of the Renaissance, Alberti and Filarete, Palladio wrote a treatise on architecture, which, as a matter of fact, was nothing but a paraphrase of that of Vitruvius. One can quite understand that in those days it was the fashion for a celebrated architect to keep himself before the public by writing a book containing his ideas upon architecture and on the great Roman theory, and Palladio, like his countryman, Scamozzi, later made use of this opportunity and custom.

The architectural writings of Palladio were divided into two parts, the first of which bore the title, "I due Libri d'Architettura d'Andrea Palladio," and was printed at Venice in 1570 by Domenico Francesca; and the second, "I due primi Libri delle Antichita di Andrea Palladio." They were afterward united in a new edition, and a large number printed, and even to-day we find them sought after as curiosities by literary people. Palladio, dedicated the two works, one to Jacques Angaran, and the other to Emanuel Philibert, Duke of Savoy. He repeated the two dedications in the united edition, addressing the first and second books to Angaran, and the third and fourth to the Duke of Savoy.

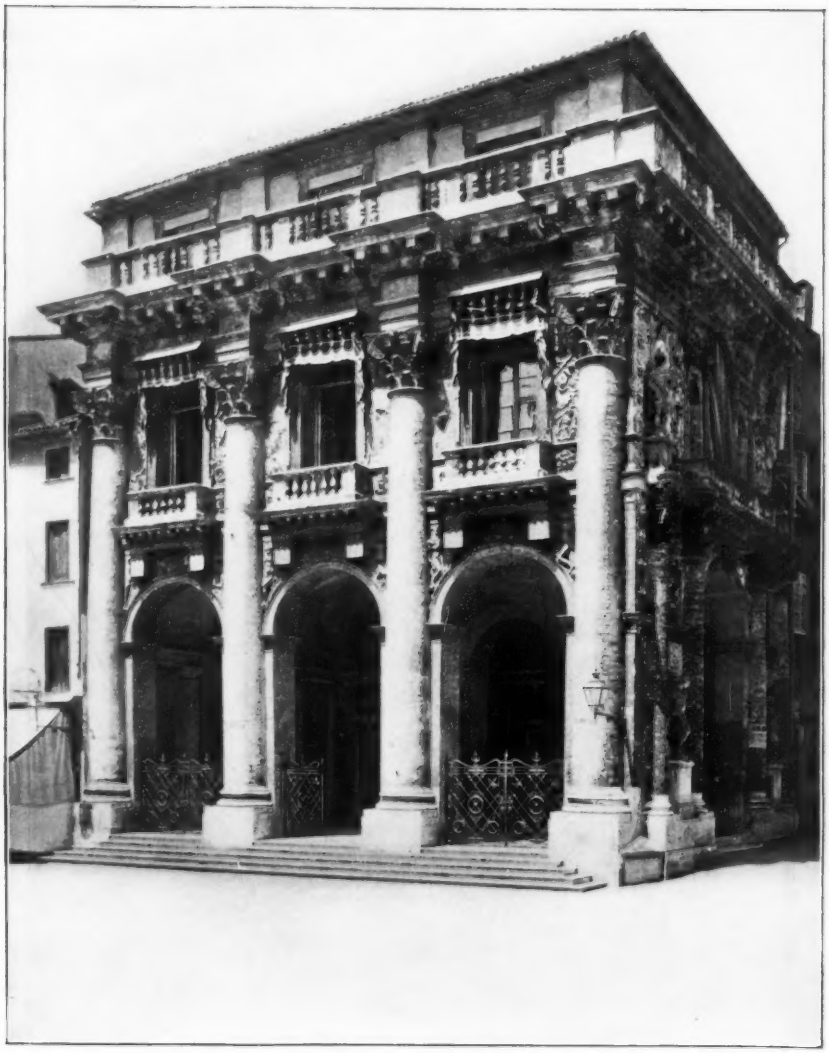
A passage in the dedication to Angaran is particularly interesting from the psychological point of view, revealing to us the confidence which Palladio had in his own proper merit. In effect he said he had "thrown so much light on architectural matters that those who will follow after will, with these examples, be able while exercising their powers and talents to restrain with ease the magnificence of their buildings to the true beauty and elegance of the ancients."

These words, which to-day we would call superb, need not surprise us. The ancients said loyally what they felt, and Palladio was not different from those artists who in memorable inscriptions have confided to us the most curious personal praises.



PALAZZO COLLEONI-PORTO, VICENZA.

In the first book Palladio described the five orders—Tuscan, Doric, Ionic, Corinthian and Composite—our author having considered, as did Vignola that the Composite was itself an order. In the second book he treated of private architecture, and gave very interesting hints and information for the times in which he wrote. The third book deals with streets, places, bridges; the fourth describes several ancient monuments, and embraced the opportunity to show in what scholarly manner he had studied them, and how perfectly he understood them. It is worth while here to show in what liberal fashion Palladio studied Vitruvius, the more so as one believes too often in the absolute impersonality of our architect, who,



LOGGIA BERNANDA (PALAZZO COMMUNALE), VICENZA.

on the contrary (and the facts bear witness in his favor), never accepted with closed eyes the judgments of others. He showed more than once a firmness of character which might be mistaken for unreasonable obstinacy. Already Trissano had exhibited reserve on some of the opinions of Vitruvius. He understood that his time was not that of the eminent theorist; and, consequently, that one could not follow on all points the text of Vitruvius. Besides, he had added (rogue that he was) that Vitruvius understood many things but taught very little. Perhaps the opinion of Palladio was not in the end very different from Trissino's. In fact, where he speaks of the

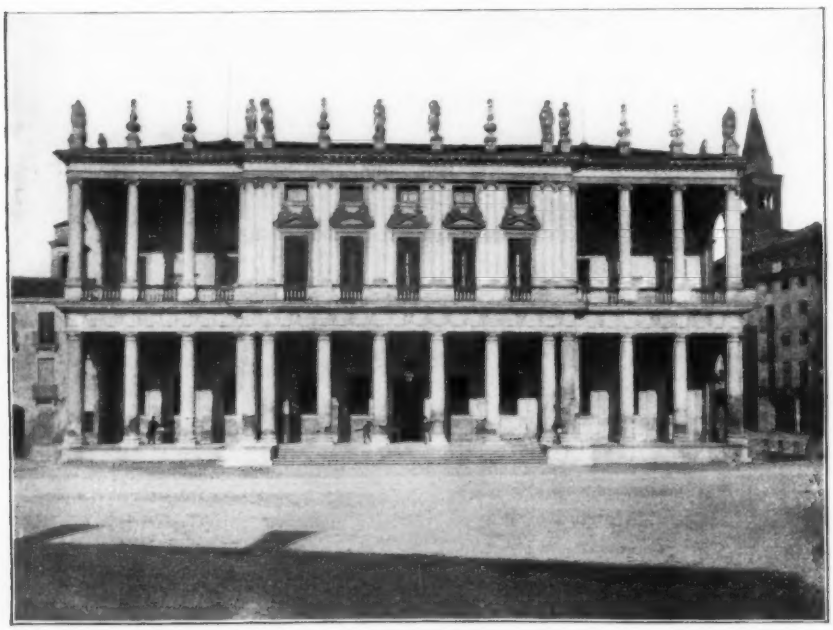
Ionian base Palladio abandons his beloved author in a trenchant manner. Vitruvius gave as the model of the Ionic base (see chap. III, of book III), a base resting on a square footing and composed of two Scotia mouldings, separated by two Astragals, with their filets. The principal Scotia, is surmounted by a large torus (round member in the base of a pillar) in such a manner that by reversing the principle that the strong should carry the weak, here it is the weak which carries the strong. Palladio dispensed with the Ionic base and preferred the Attic, because that, he remarked, please me more. Here it is a matter of detail, but it is precisely in details that the critic shows his bent. Always in spite of the note of independence which distinguishes Palladio the Vicenzan architect never ceased to make known his veneration for Vitruvius, and never refused his co-operation toward the researches which his contempories made among the Vitruvian texts. We find the proof of what I have just said in certain words of Daniele Barbaro, famous for the skill he acquired in the interpretation of Vitruvius and another of the "Comments" which had their moments of celebrity.

From the strict point of view the architectural works of Palladio were his best literary productions, but they were preceded by a small "brochure," little like his books, but which has an interest on the question of Palladio's first studies of Roman antiquities. The "Antichita di Roma raccolte brevemente dagli autori antichi e moderni," which appeared the first time in 1554, was subsequently published twenty times, as late even as 1711, which is the date of the last edition.

One easily sees that this work is of the historic order, and Palladio shows in it a large acquaintance with Roman history in a profound and careful lecture on monuments. It is curious that Palladio's "brochure" became in his time what the "Itinerary of Rome," of Nibby, was afterward, a kind of manual for visitors to the Eternal City, and even at present it is interesting and amusing reading. The "Antichita di Roma" was Palladio's book of introduction to his historical work, in which we witness more than in his other publications the solid, logical knowledge of our architect. It places him at once in a very favorable light.

I would like to refer to the "Commentari di Cesare," which appeared for the first time in 1575, where Palladio was assisted at the commencement by his two sons, Leonide and Orace, two young men endowed with high literary attainments, who in the brief space of two months were doomed both to die, and to thus cause Palladio the most poignant affliction. He refers to it in the preface to his "Commentaries." The publication of Cæsar's "Commentaries" appears like an academical production to those who do not know the time in which it appeared, and that the times encouraged this sort

of research. Gunpowder no doubt had substantially modified the military tactics of the ancients, still many scholars at that time studied Roman strategy to find out how modern captains could make use of it, and some tried to prove that even in military art the Romans offered a remarkable source of theoretical study and practical illustration. Palladio never disguised from himself the opposition which would be raised to his opinions; on the contrary, he set to work to defend them in a close and vigorous polemic. It is not necessary for me to point out here how far (according to my ideas) Palladio was right or wrong. It will be sufficient if I maintain that when he



MUSEO CIVICO, VICENZA.

published his "Commentaries" he produced a work of undoubted merit. Dedicated to Giacomo Buoncompagni, a general of the Holy Church, the "Commentaries" ran through several editions, as was the case with the other works of Palladio. The last was issued in Milan in 1829.

The edition of 1575, the first of which bore the following title: "I Commentari di C Giulio Cesare con le figure in rame de gli alloggiamenti de fatti d'arme delle circonvallationi delle citta et di molte altre cose notabili descritte in essi. Fatté da Andrea Palladio, per facilitare a chi legge la cognition della historia—Con privilegi," printed at Venice by P. da Francesca in 1575, is also remarkable as a typographical work—counting 39 plates, a topographical map



PALAZZO LOSCHI, ZILARI, VICENZA.

of Spain, another of France, and one designed as a preface, in all 42 plates. The first part of the work deals with the "Gothic War," divided into three books. The second treats of the "Civil War," in three books, and the third of the "Alexandrian War," of Aulo Hircio. Another book is taken up with the "African War," and the "War in Spain," with which the work ends.

With this the literary works of Palladio which have come down to us end, but there is another which is not always quoted, and to which I must also recall the attention of the reader. I refer to the work in which Palladio describes his studies on the Greek historian, Polybius, who lived from 220 to 146 B. C., and of which, unfortunately, there exists but one letter (dedication) of 1569, addressed to Come, Grand Duke of Tuscany. It is supposed that the Vicenzan architect took up these studies in order to aid Count Marius Savorgnan, related by blood to the Porto family, who lived from time to time at Vincenza, and who was well versed in the military art of the ancients.

I have spoken of the "Theorist" and "Savant," but as yet have said nothing about the Man of Letters; that is to say, the Stylist. It is because (as Baudelaire remarks) they correspond to and complete each other—a saying here very much to the point, for the architect was the "litterateur" and "savant" combined. As a matter of fact, Palladio wrote as he designed; his style has the same clearness as his constructions. Palladio, the author, knew nothing of either literary artifice or the effect of colored style, both of which he willingly sacrificed to simplicity of diction, which, sometimes, to tell the truth, glides into the cold and formal. In short, the lyric strain is absent from Palladio's prose, notwithstanding one often finds there religious expression.

Allow me to give you in the original language one of the most poetical pages from the pen of the architect-author. I have found it in the midst of the flat sea of his writings on architecture:

"E veramente considerando noi questa bella macchina del mondo di quanti maravigliosi ornamenti ella sia piena. * * * Non possiamo dubitare che dovendo essere simili i piccoli templi che noi facciamo a questo grandissimo, non siamo tenuti a fare in modo che tutte le parti insieme una soave armonia oppertino agli occhi dei riguardanti."

The example is not sufficient to give a complete idea of Palladio's style, nevertheless it shows both the poetical note and a correct picture of Palladian phrase and period.

I find in the following a remarkably religious note from the standpoint of Palladio's love of classical antiquities, which I would like thus to translate:

"It is bad (said our architect) and worthy of condemnation that

we who have the true worship may be beaten by those who are without a glimmer of the truth."

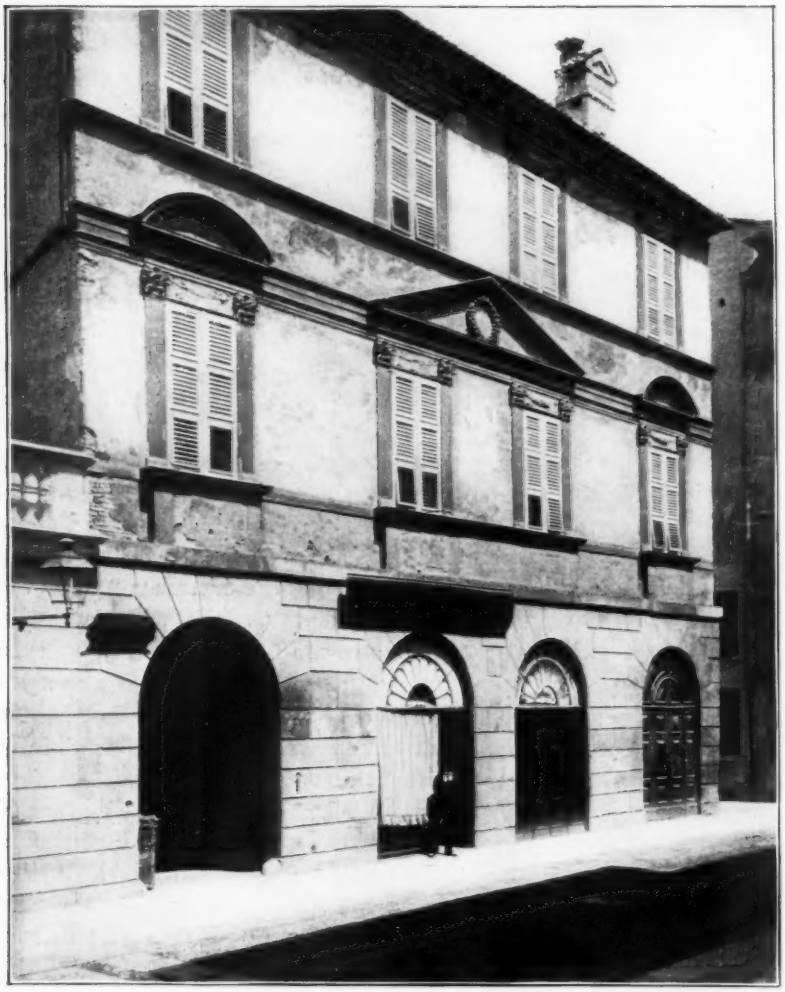
The author refers to the pagan temples, and following the usage of the time he ignored the Byzantine and Gothic churches, the Middle Ages being the time of the most profound architectural decadence, according to the ideas of the Renaissance.

The hope that Palladio as a writer would be more highly esteemed in future has often been expressed, but although in the Italian antologies we find passages by literary artists, both ancient and modern, such as Vasari, Cellini and Dupré, the name of Palladio never appears there.

That is an injustice which will be righted, let us hope, as soon as the renown of Palladio for his literary style shall become better known.

And what was the influence that Palladio as an architect exercised on his own and modern times? It is fair to say that it has been enormous. It is sufficient to make an excursion particularly in and around Vicenza to be convinced of this. This influence touched his contemporaries and later those who tired of the extravagances of the Baroque. It may be affirmed on this point that Palladian architecture and the theories of the Vicenzan architect are, in Italy, even more vigorous among moderns than they were among his contemporaries. Nevertheless, it cannot be said that Palladio has a disciple who continued, with any fame, his architectural traditions. Perhaps if his sons, whom he had taught to study ancient authors, had not died so young, he might have had truly glorious successors. But Heaven willed otherwise, and when the brilliant sun of Palladio set it left us nothing but pale satellites, and his voice but its echoes from afar. As Palladio has spoken the first word of his art, so even he said the last, and nothing resulted from his work, but sterile copies of what was already written down to the very last word.

We have the example of Vincenzo Scamozzi, who was the rival of Palladio, and who left Palladianism at its most successful moment. Among the contemporaries and followers of Palladio we find everywhere demi-shadowy figures: a Francesca and Giovanni Battista Albanese; a Camillo Mariani, a Natal Baragia, a Giovanni Grazioli. One might make some exception in favor of Marco Thiene, who was bound to Palladio by a cordial friendship, but whose title to celebrity rests more on his poetry and patriotism than on his architecture. He was also a "savant," and on this ground the name of Thiene is coupled with Palladio, with Trissino and with Maganza apropos of a memorable journey to Rome and so far as the façade of the Barbaran Palace at Vicenza is concerned. But there still remains to be solved the question of the paternity of this building. The façade



PALAZZO BARBARAN, VICENZA.

of the Barbaran Palace is very well proportioned, and has an exquisite ingenuity and taste, which is not without interest for the modern architect who wishes to arrive at artistic effects with the least resources possible. This façade, so to speak, has an air of relationship with the famous Casa del Palladio, devised with taste by its author, who up to the present moment is unknown. There does not exist an architectural building in the Palladian manner more original than this one. Contrary to general opinion, I affirm that the admirer of Palladio has no occasion to blush for this little house where Palladio certainly did not live, as has been already shown several years ago by a document which admits of no discussion.



PALAZZO PORTO BARBARAN, VICENZA.



CASA DEL PALLADIO, VICENZA.

As I have already said, Palladio's architecture received more attention and honor after the 18th century, or, at least, it was studied more then than during the 16th century. To obtain a new and richer blossoming it was necessary that Palladian architecture should suffer the fantastic reaction of the Bernini, the Borromini, the Vittoria and of the Longhena. Then after the epoch of architectural neurosis the calm and solemn lines of Palladio again inspired Italian architecture, which once more returned to the severe imitation of the ancients and their most faithful followers. This is the most curious point, perhaps, in the history of architecture since the Renaissance, the return to Palladian architecture after it was forgotten for a century—or worse still—after it was condemned for its servility, its platitude and its uniformity.

The return to the ancients was the return to Palladio, i. e., to the source Vitruvian, and Vitruvius, especially in Venice, was again preferred, whilst Palladio being an architect, as well as a theorist, became the inspirer par excellence of the professional architect.

The return, then, was hailed with enthusiasm, for the public was tired of this Baroque architecture and demanded repose. People's taste was strengthened by the discovery of Herculaneum and Pompeii, and by the new publications on classic art, so many of which Piranesi provided. Who does not recall Piranesi's eaux fortes of Rome—that artist whose work has remained without equal? In addition to the architectural treatises which appeared during the Renaissance, was added the new Studies upon the Vitruvian text, and it was the Marquis Poleni who in Venice, the fortress of Palladism, sought to throw new light on this same text, with his "Esercitationes Vitruvianæ," which was studied both by scholars and by architects, because Poleni was truly an authority in mathematics and architecture. But as I have just said, Vitruvius having adhered to pure theory, while Palladio, on the contrary, had added to the written word the actual work of building, it follows that Palladio was the inseparable guide of architecture which after the neurosis of the 17th century developed in Italy up to the first half of this century.

Alfredo Melani.



RESIDENCE.

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